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(12) **United States Patent**
Carter et al.

(10) **Patent No.: US 8,702,085 B2**
(45) **Date of Patent: Apr. 22, 2014**

(54) **NOTEPAD FORMING METHOD AND APPARATUS THEREFOR**

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(73) Assignee: **Ra Corporation Pty Ltd**, Caringbah (AU)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 118 days.

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(22) PCT Filed: **Jan. 16, 2009**

(86) PCT No.: **PCT/AU2009/000046**

§ 371 (c)(1),
(2), (4) Date: **Jan. 21, 2011**

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(65) **Prior Publication Data**

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(30) **Foreign Application Priority Data**

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Jul. 17, 2008 (AU) 2008903669

(51) **Int. Cl.**
B42B 9/02 (2006.01)

(52) **U.S. Cl.**
USPC **270/58.07**; 270/52.17; 270/52.18; 412/8; 412/33

(58) **Field of Classification Search**
USPC 270/58.07, 52.09, 52.17, 52.18; 156/250, 256; 412/8, 16, 33, 37
See application file for complete search history.

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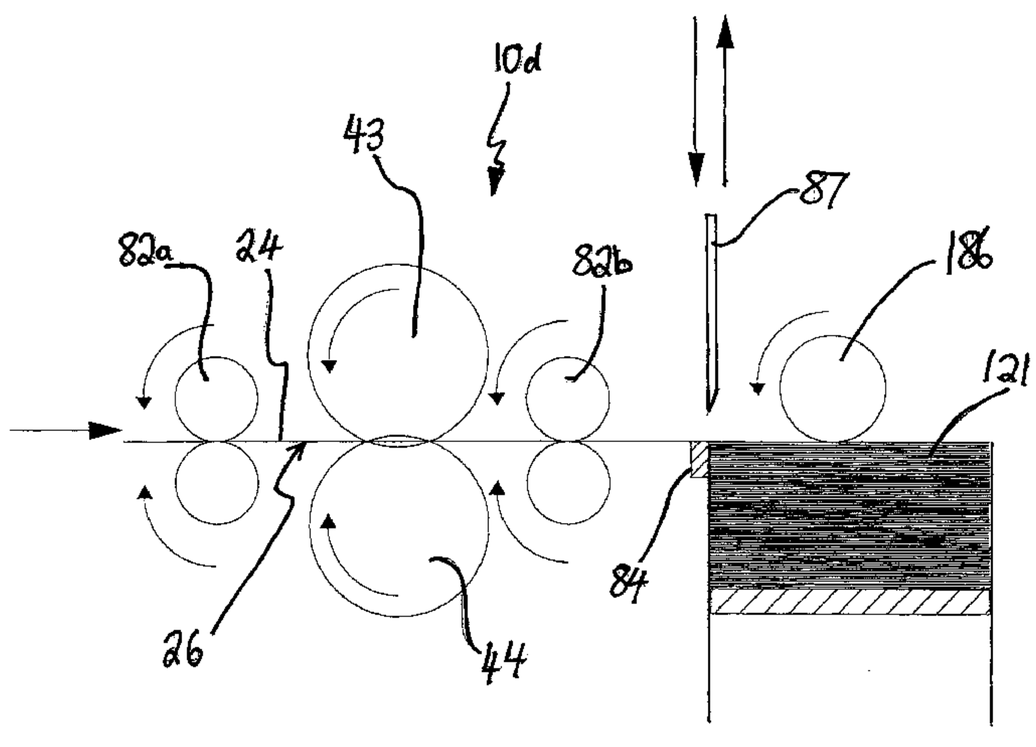
Primary Examiner — Patrick Mackey
(74) *Attorney, Agent, or Firm* — The H.T. Than Law Group

(57) **ABSTRACT**

Theres is disclosed a device (**10**) for manufacturing a notepad (**15**) comprising a stack of sheets, a first side of each sheet having an adhesive to attach the first side to a reverse face of a sheet immediately facing said first side in said stack. The device (**10**) including a sheet feeder (**20**) for loading one or more loose sheets (**24**) of similar dimensions with the reverse face of each sheet (**24**) in said stack facing in the same direction and feeding each said sheet downstream of said device (**10**). A cutting means (**40**) is provided to cut each sheet (**24**) or a number of said sheets (**24**) to predetermined dimensions. An adhesive applicator (**60**) applies adhesive to a portion or portions of the first side of each sheet (**24**). A stacking means (**100**) stacks the cut sheets one on top of the other whereby a forming means (**120**) forms the cut sheets together to form the notepad (**15**).

19 Claims, 56 Drawing Sheets



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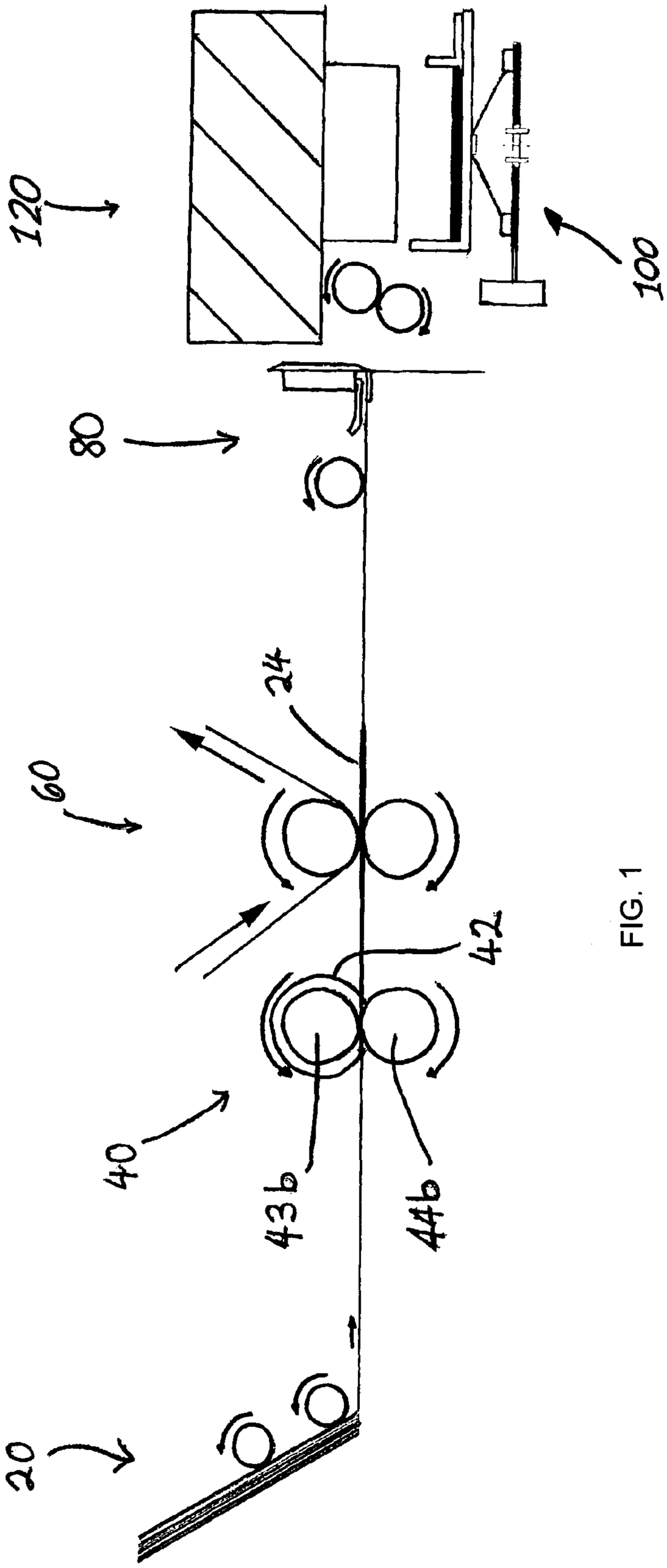


FIG. 1

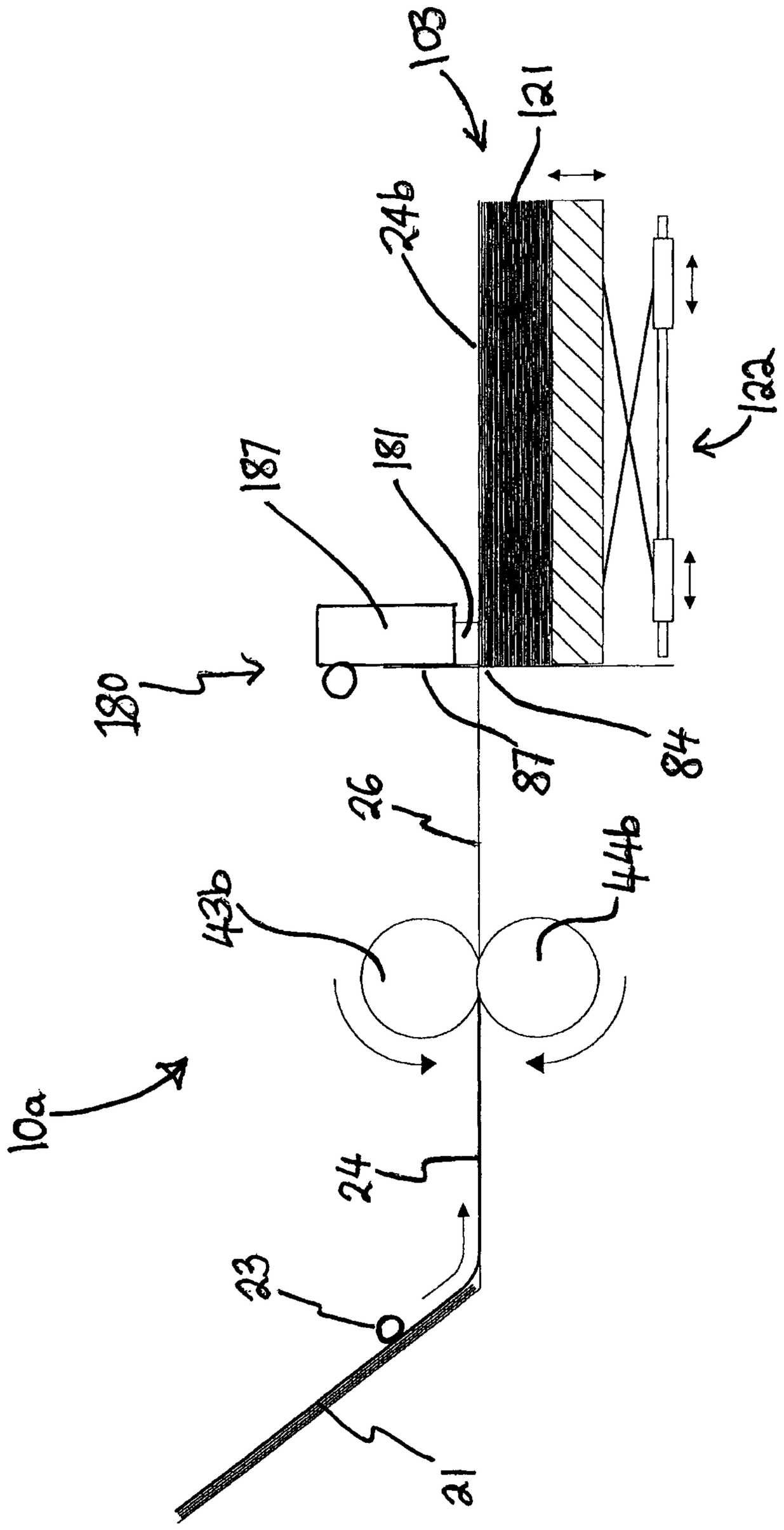


FIG. 1A

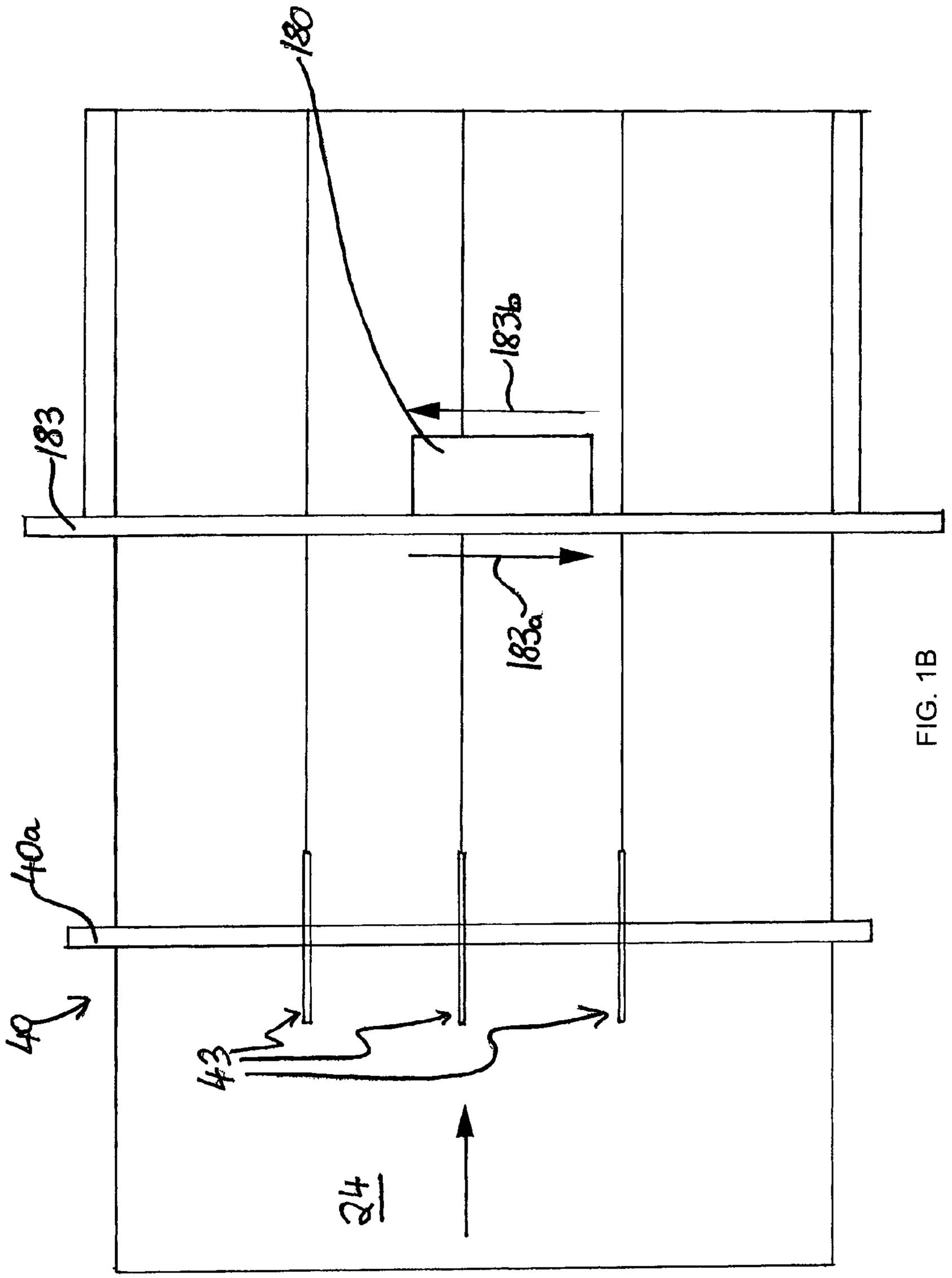


FIG. 1B

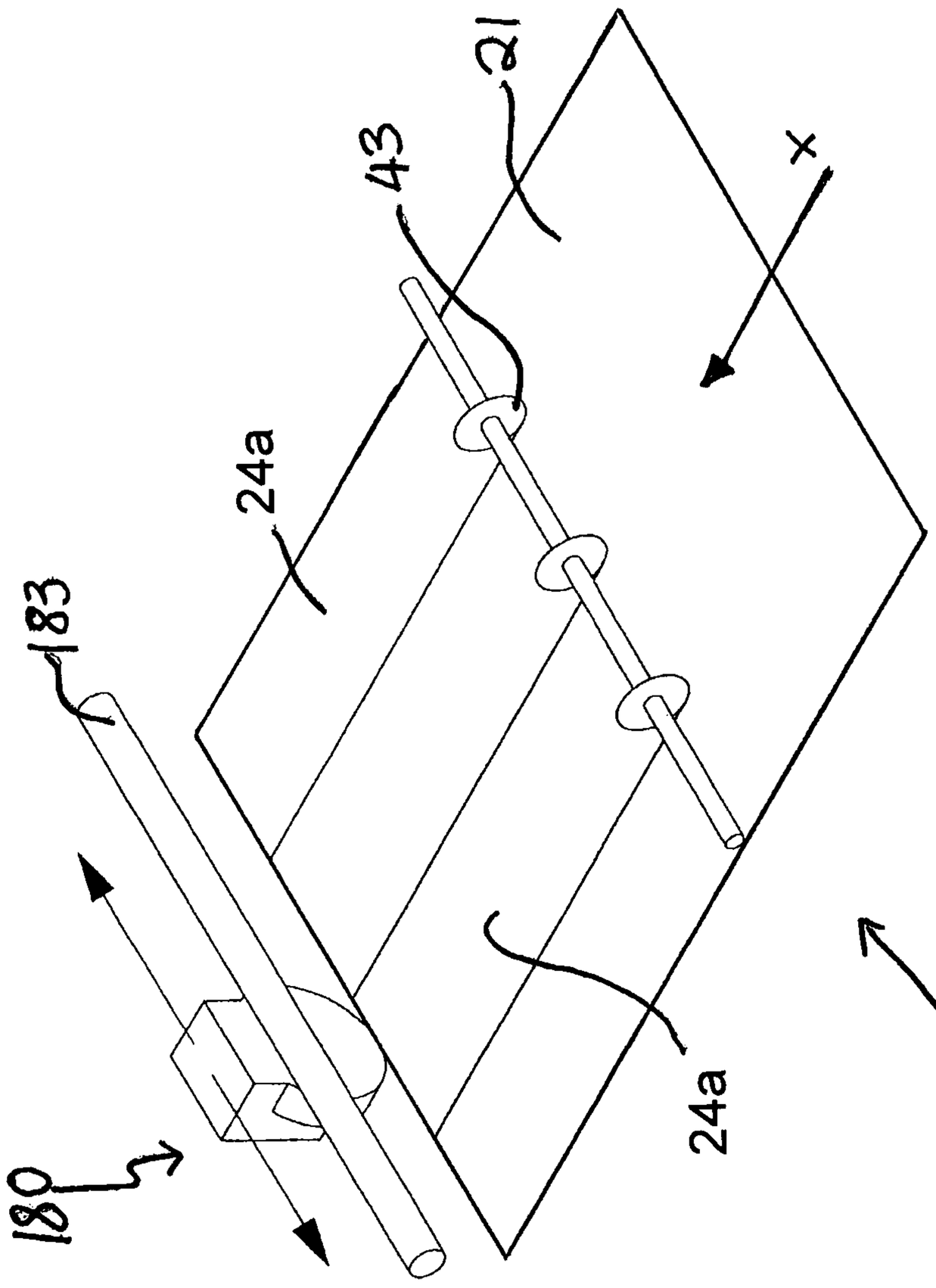


FIG. 1C

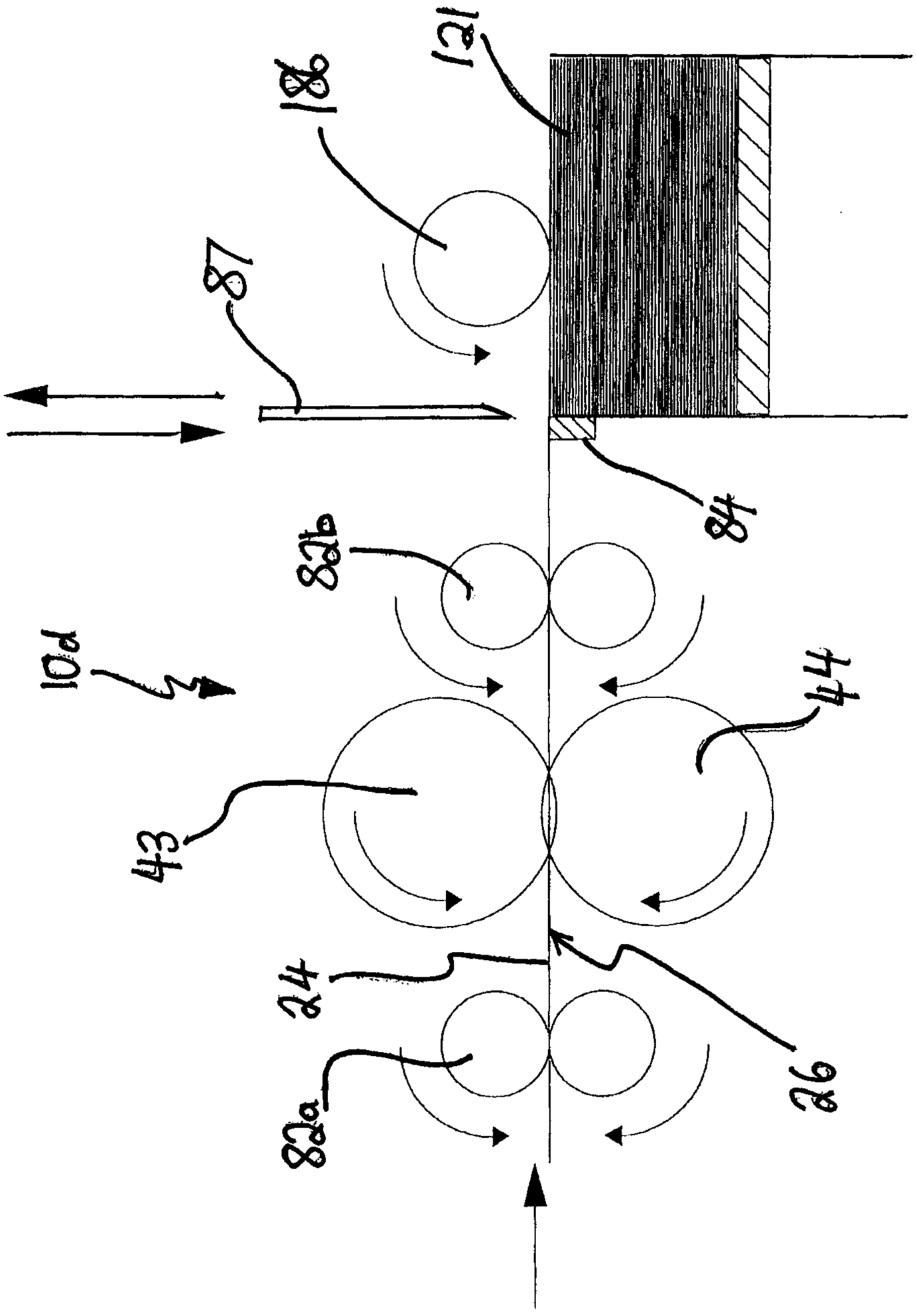
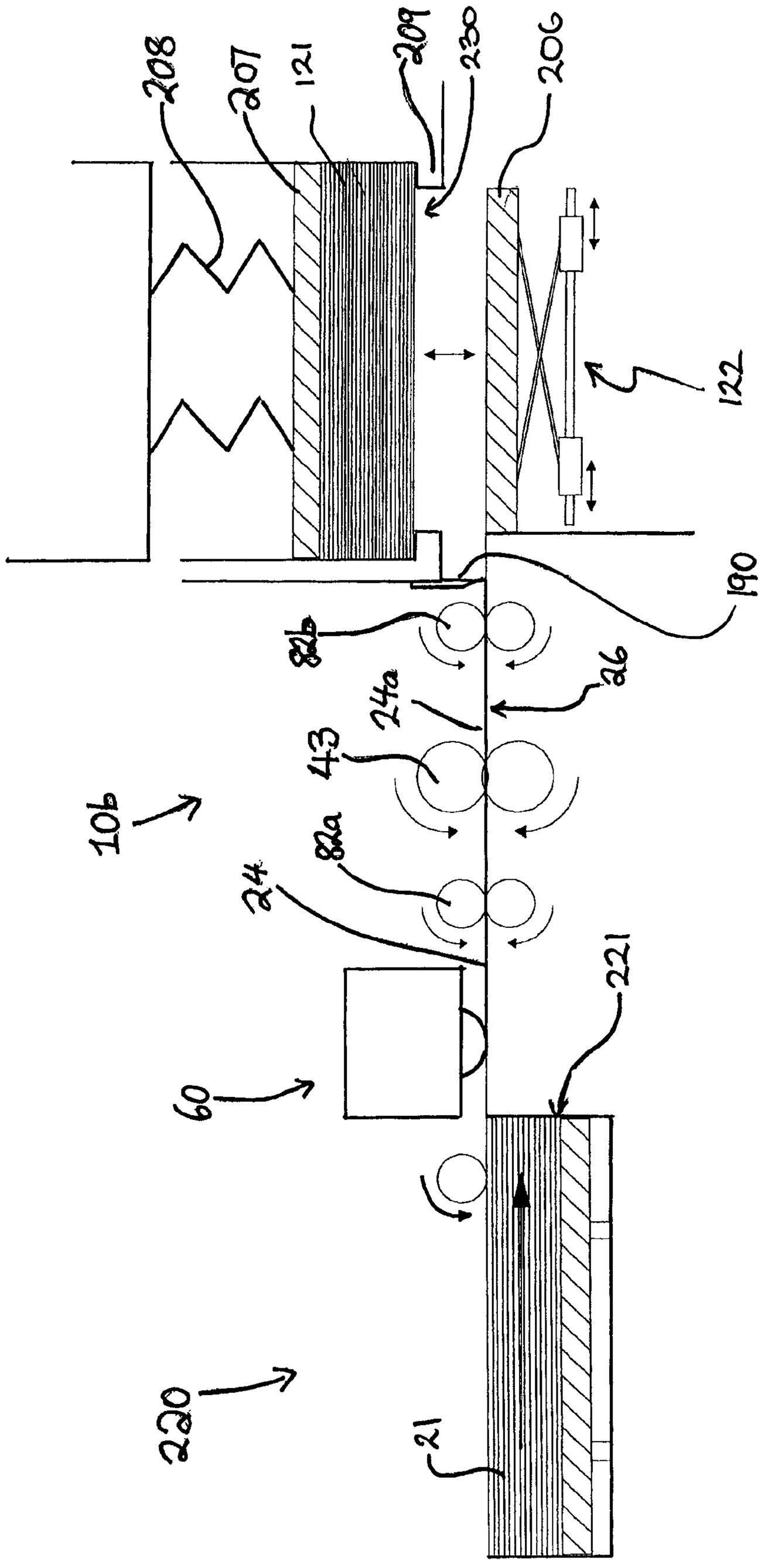


FIG. 1D


208
207
121
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82b
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24a
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106
82a
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220
21

FIG. 1E

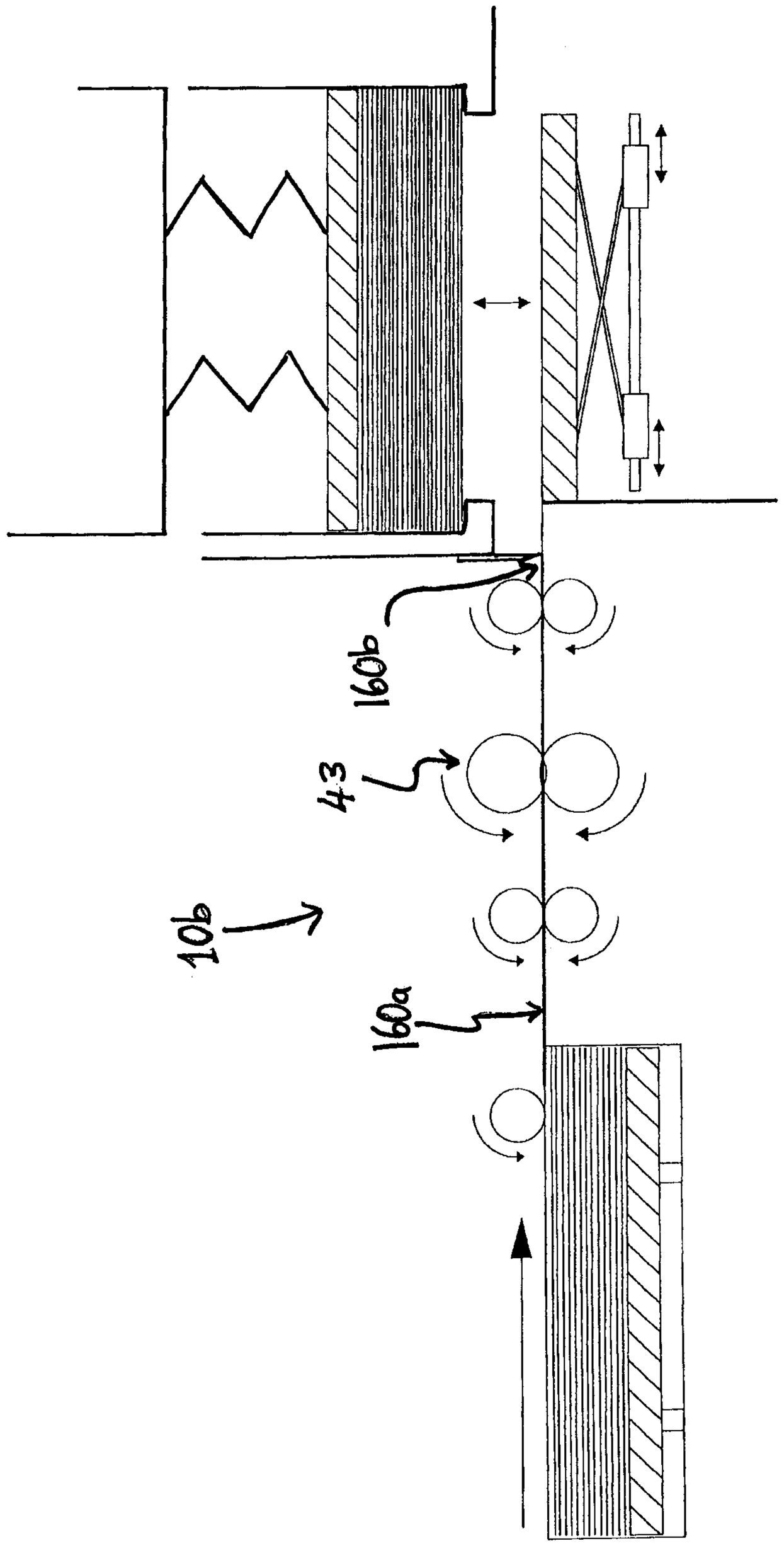


FIG. 1F

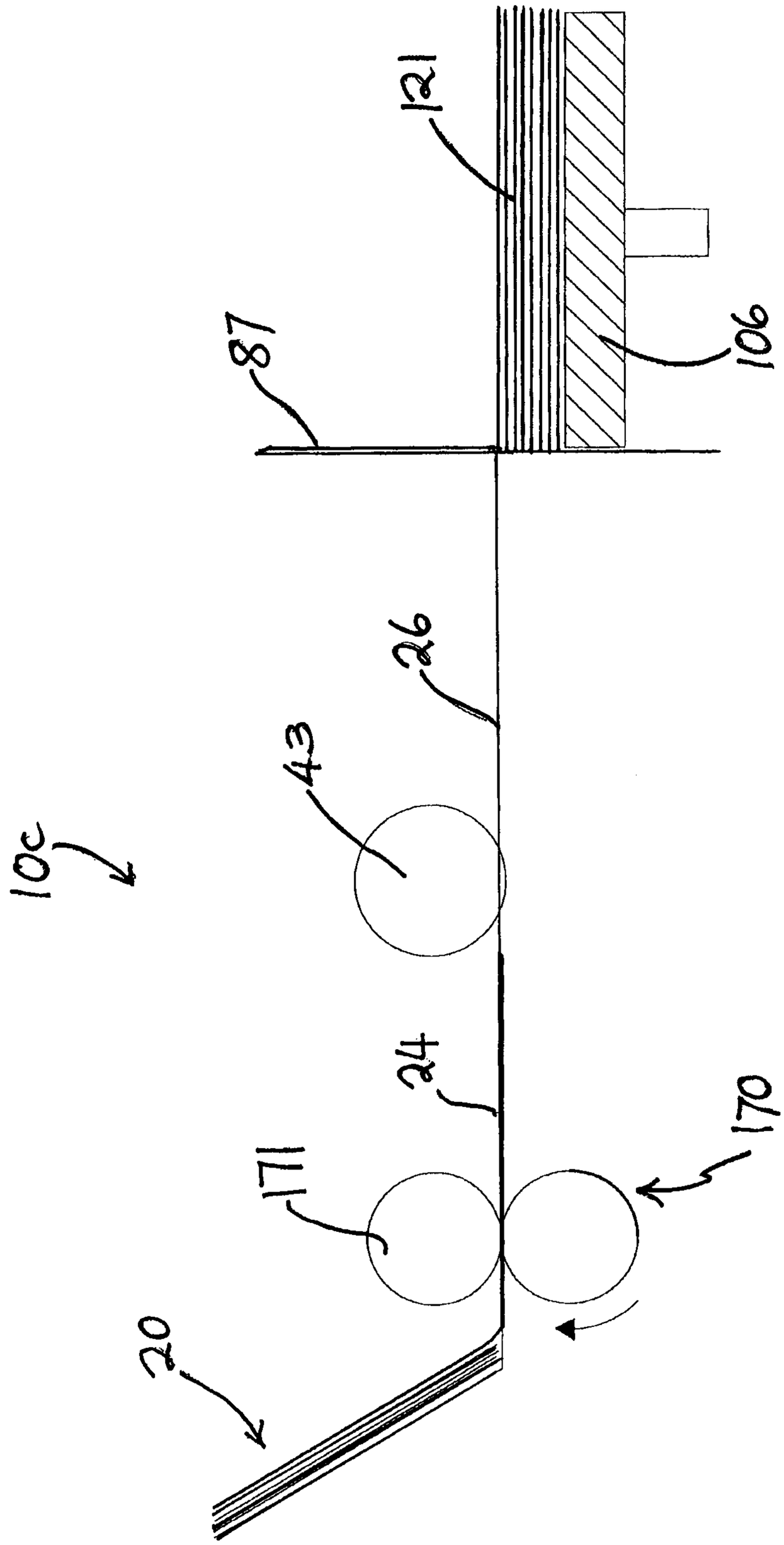


FIG. 1G

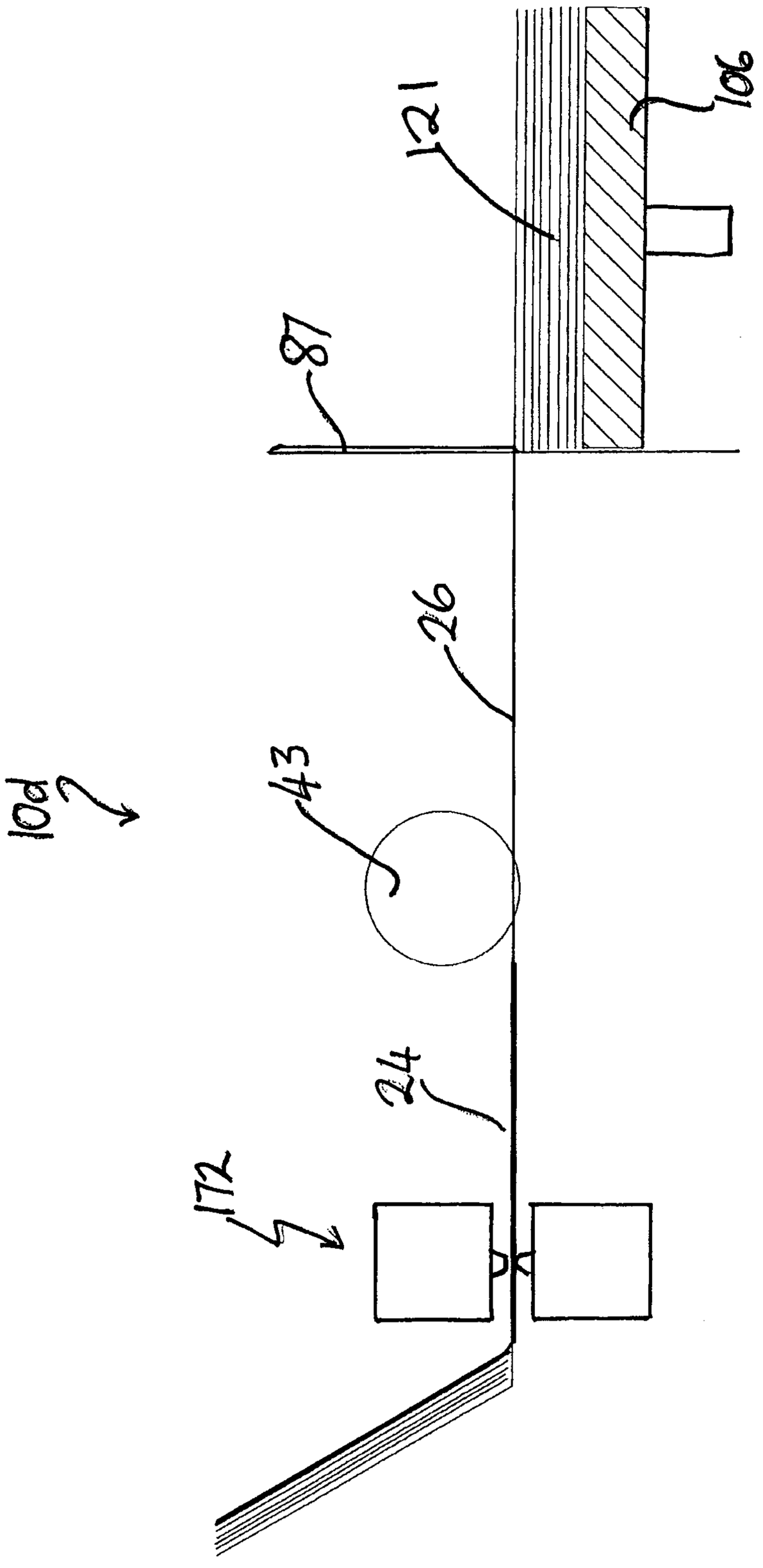


FIG. 1H

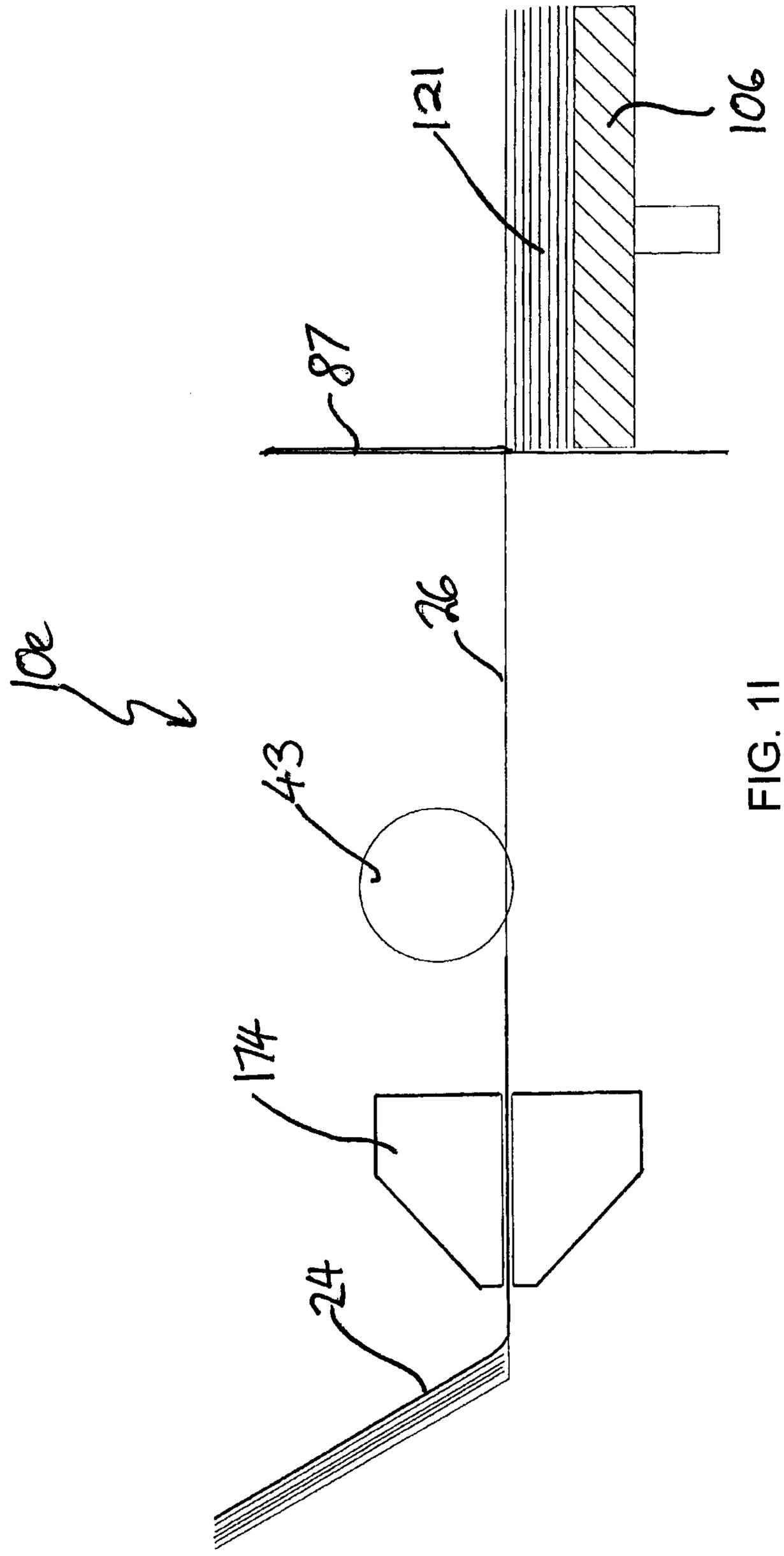


FIG. 1I

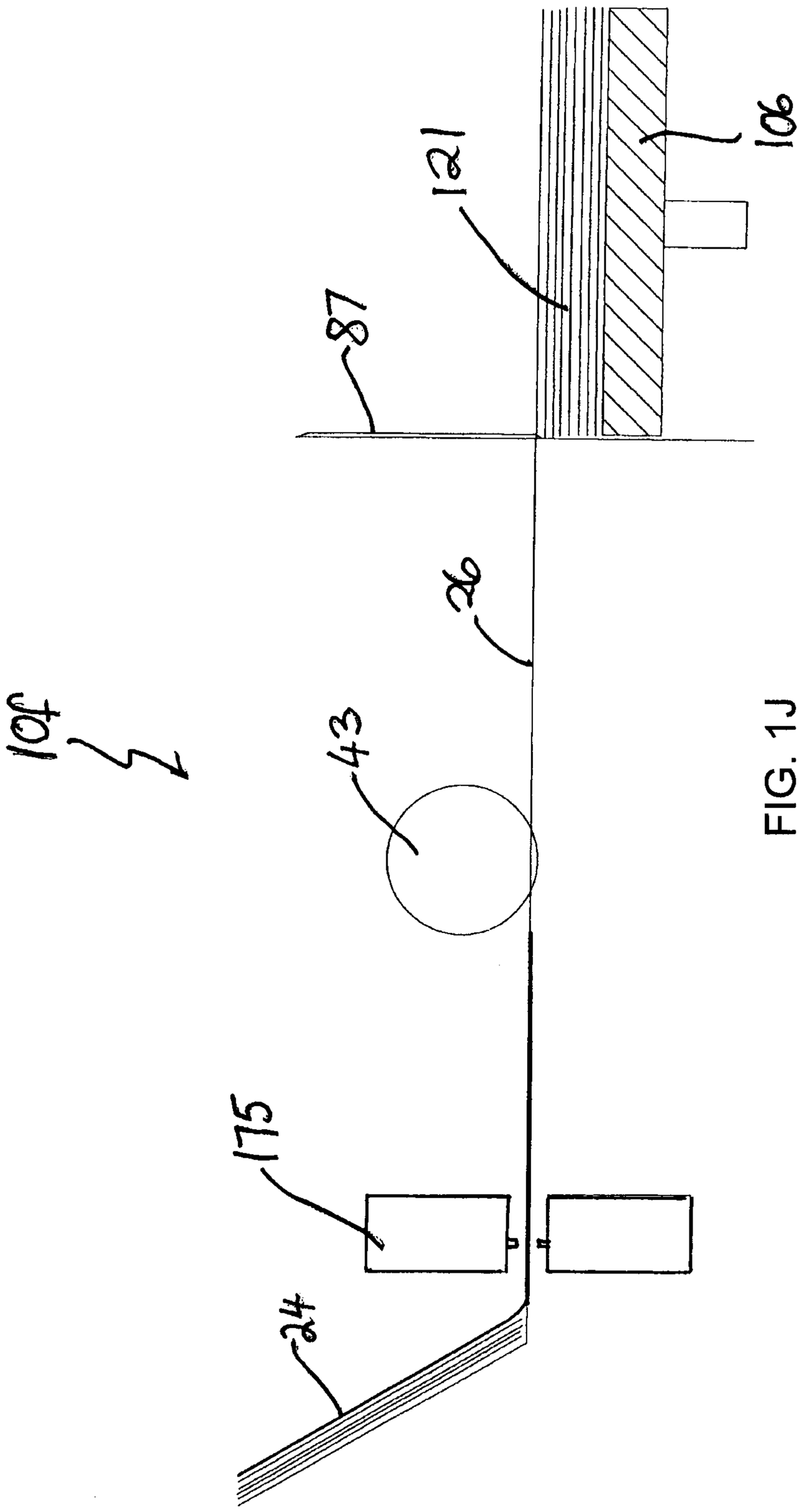


FIG. 1J

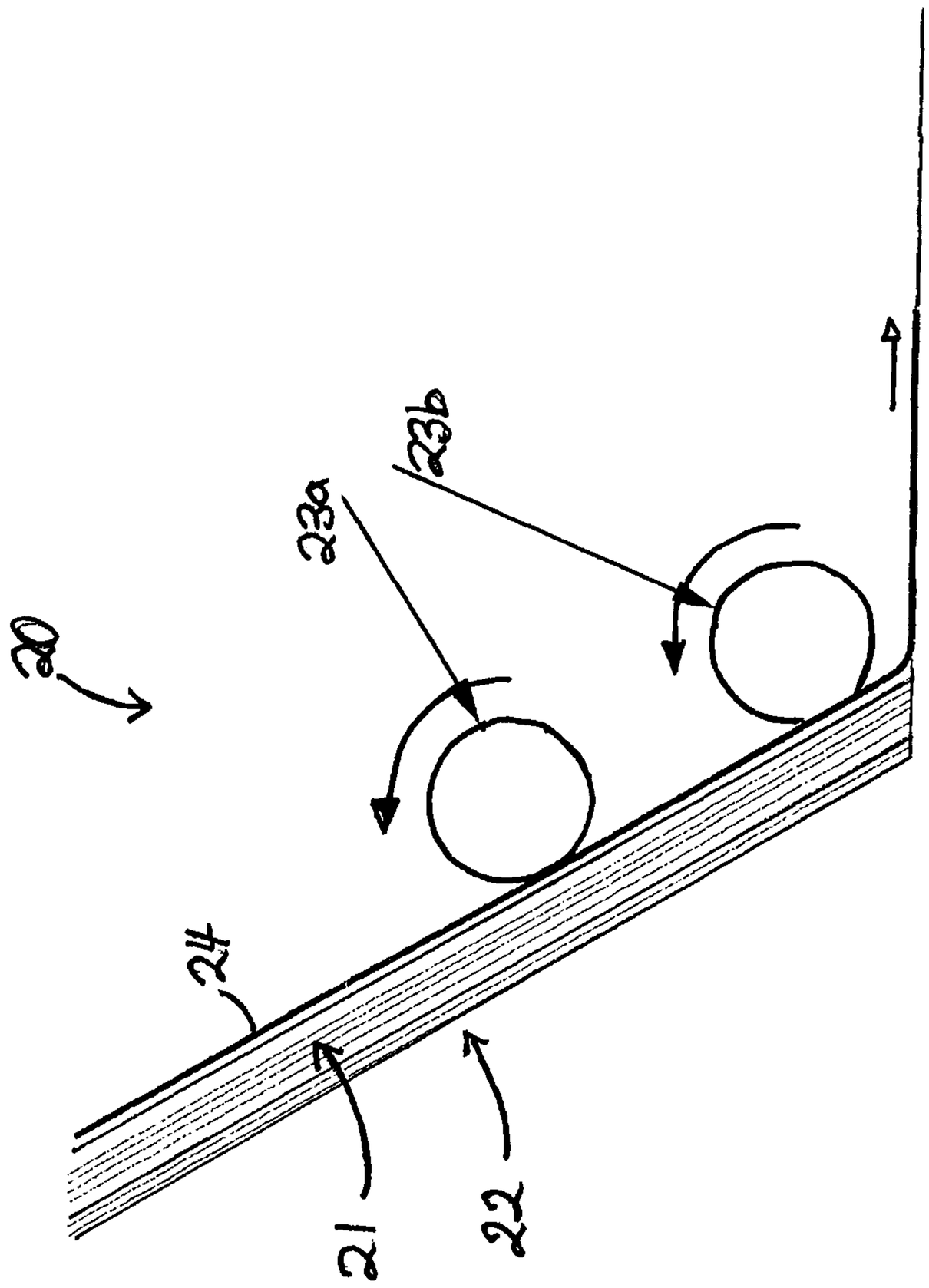


FIG. 2

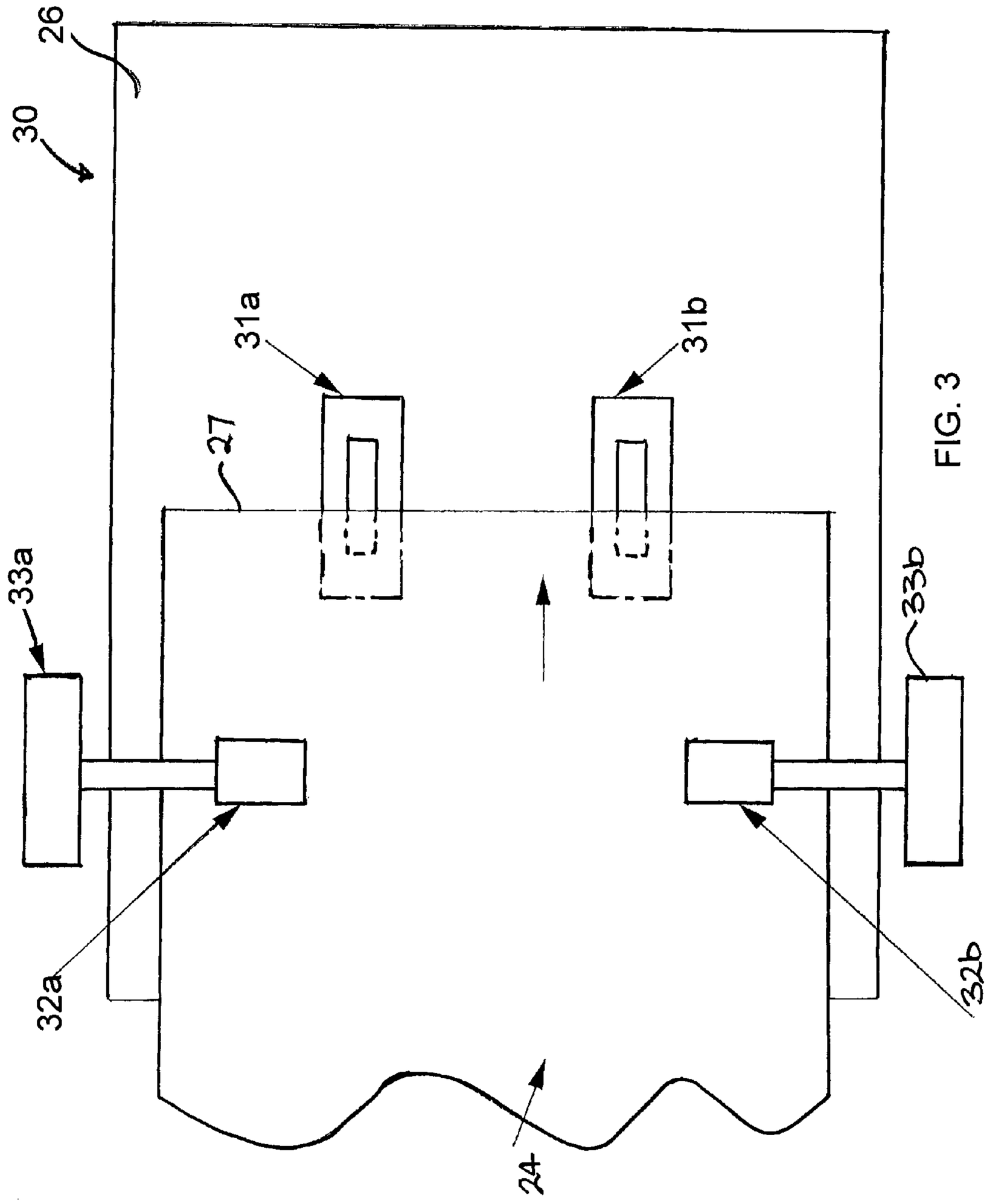


FIG. 3

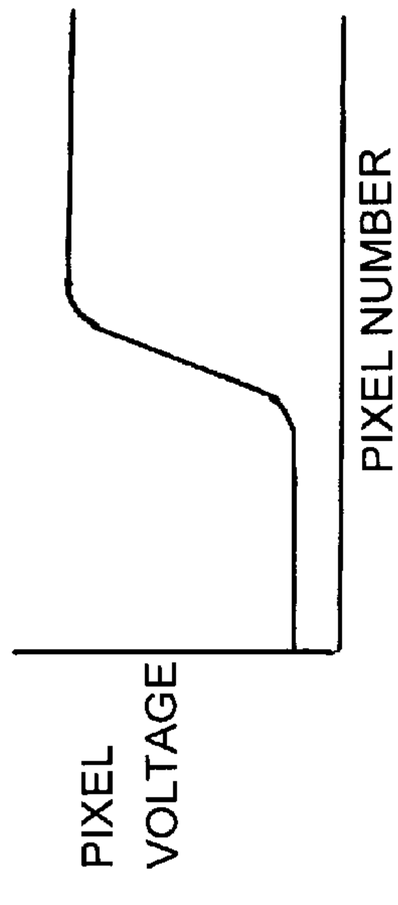


FIG. 4D

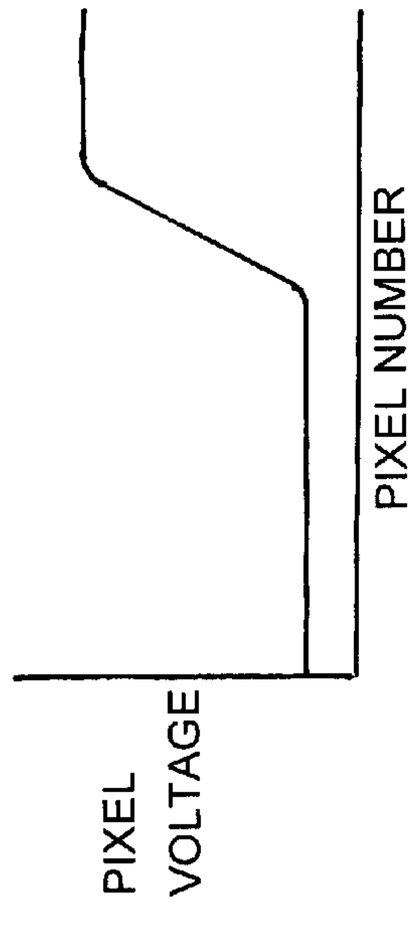


FIG. 4E

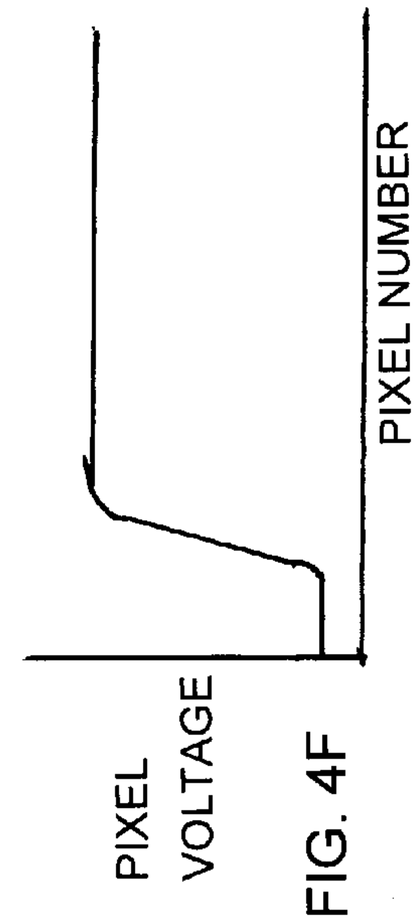


FIG. 4F

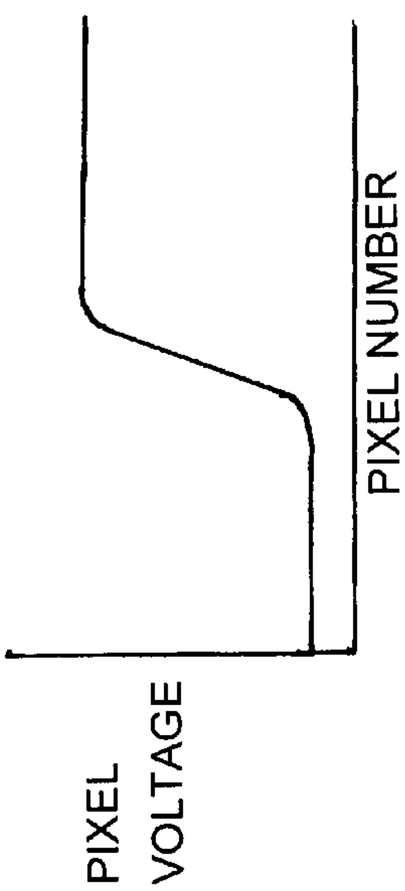


FIG. 4A

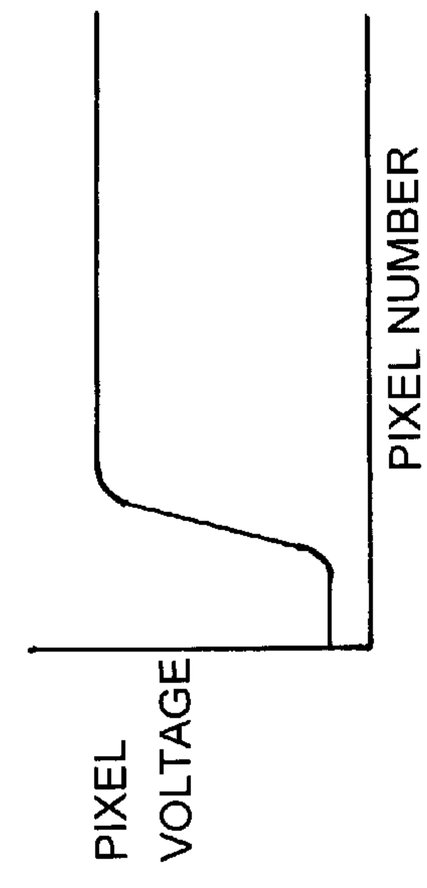


FIG. 4b

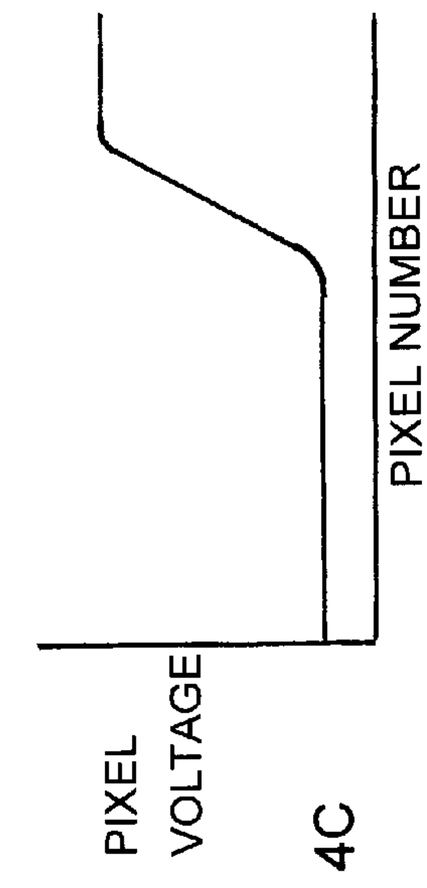


FIG. 4C

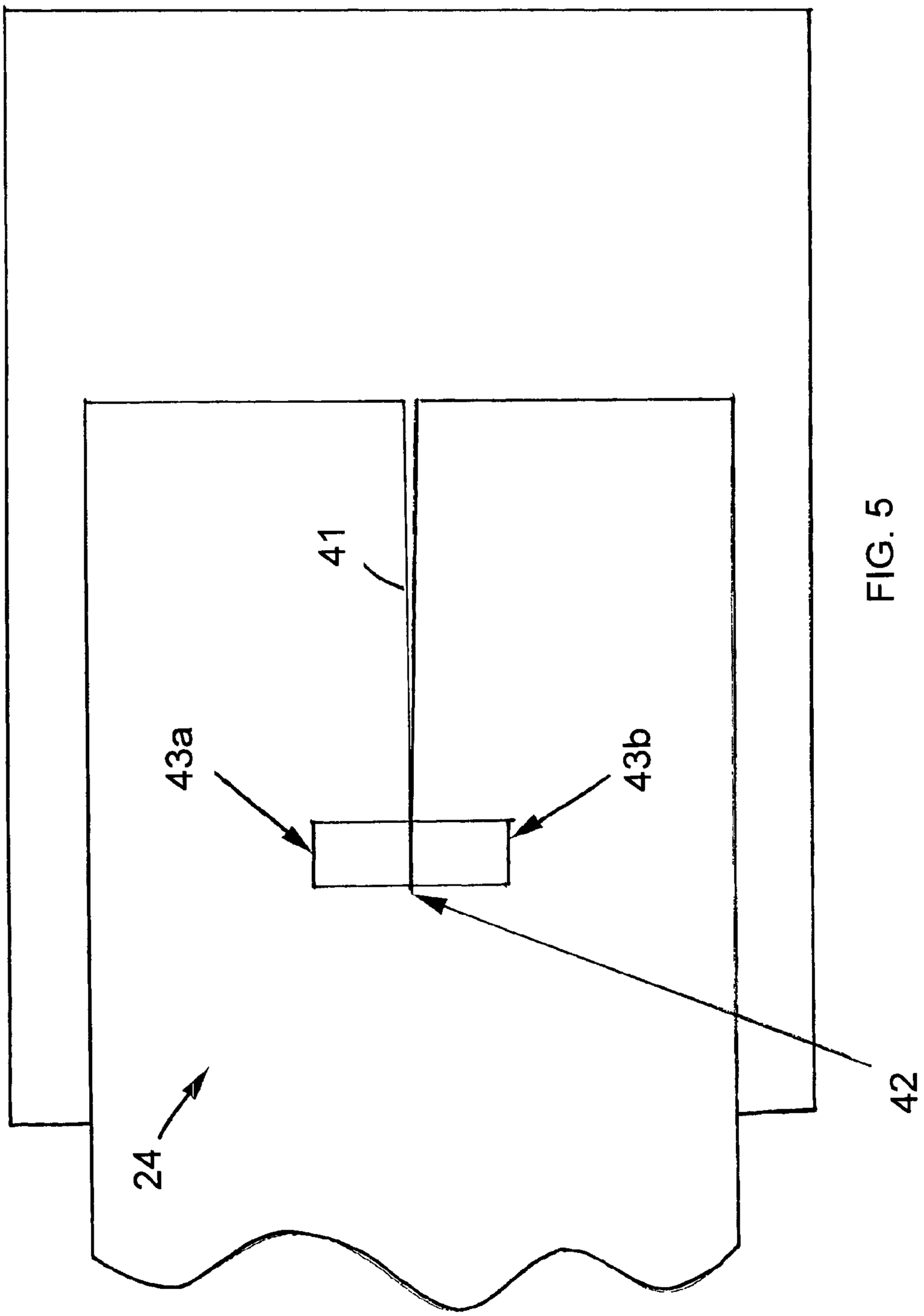


FIG. 5

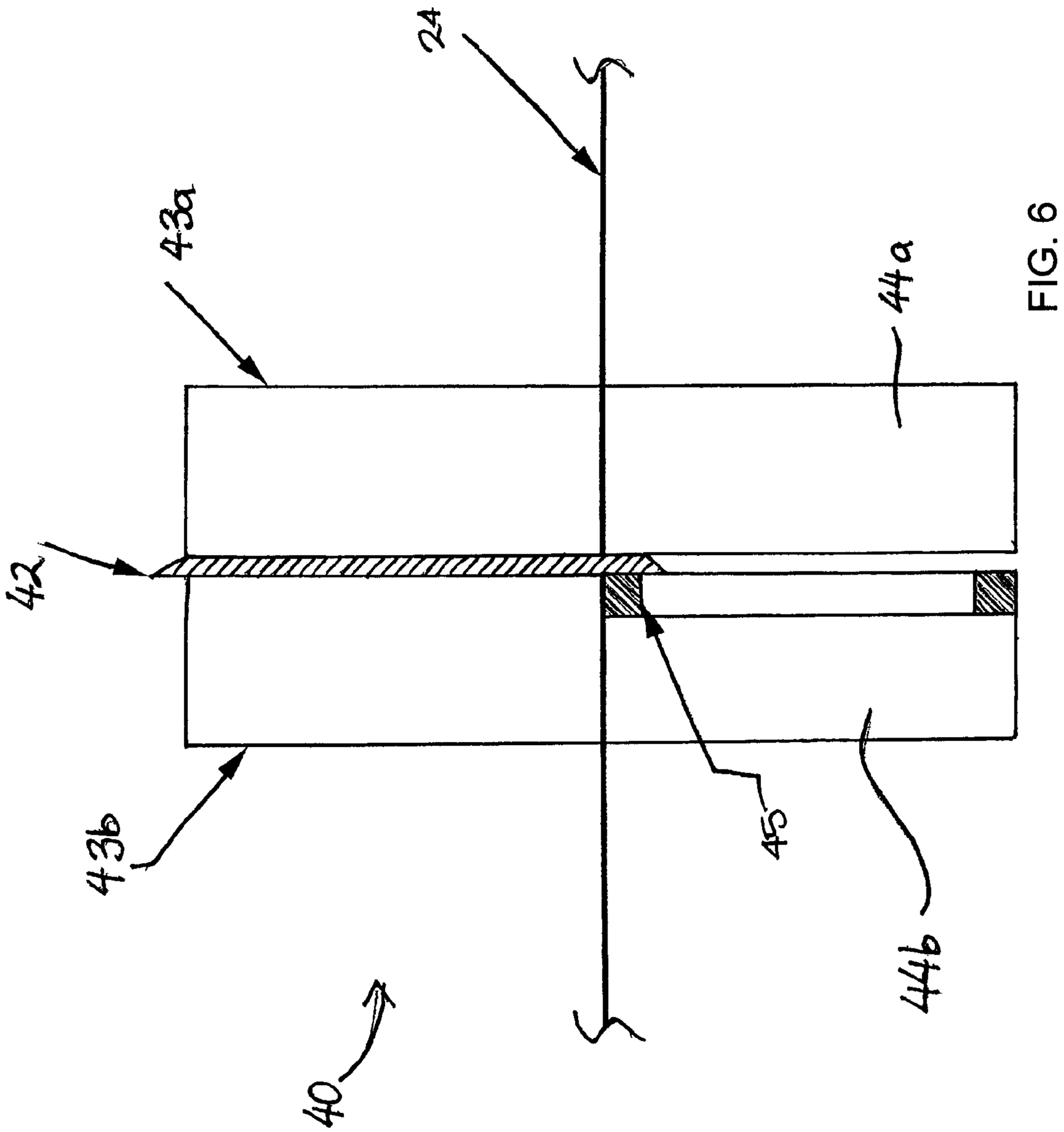


FIG. 6

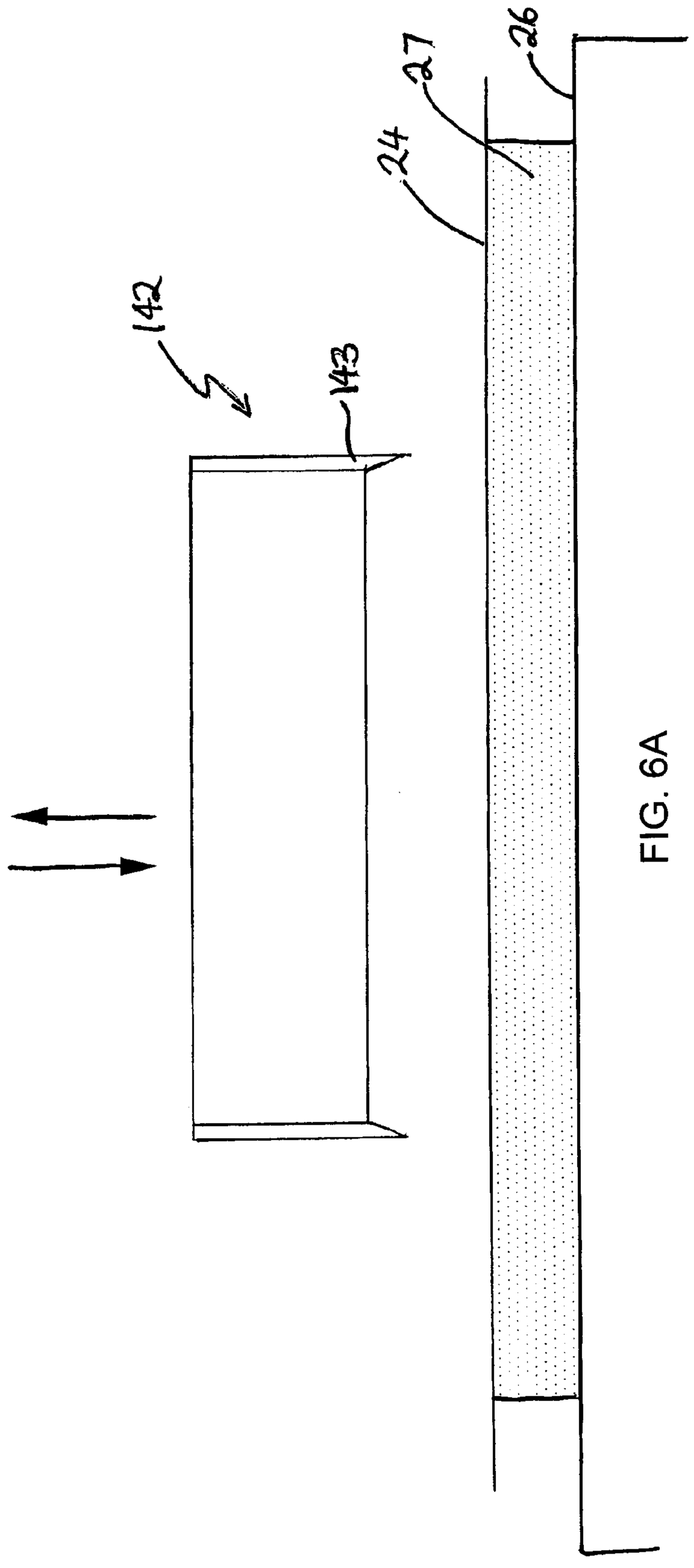


FIG. 6A

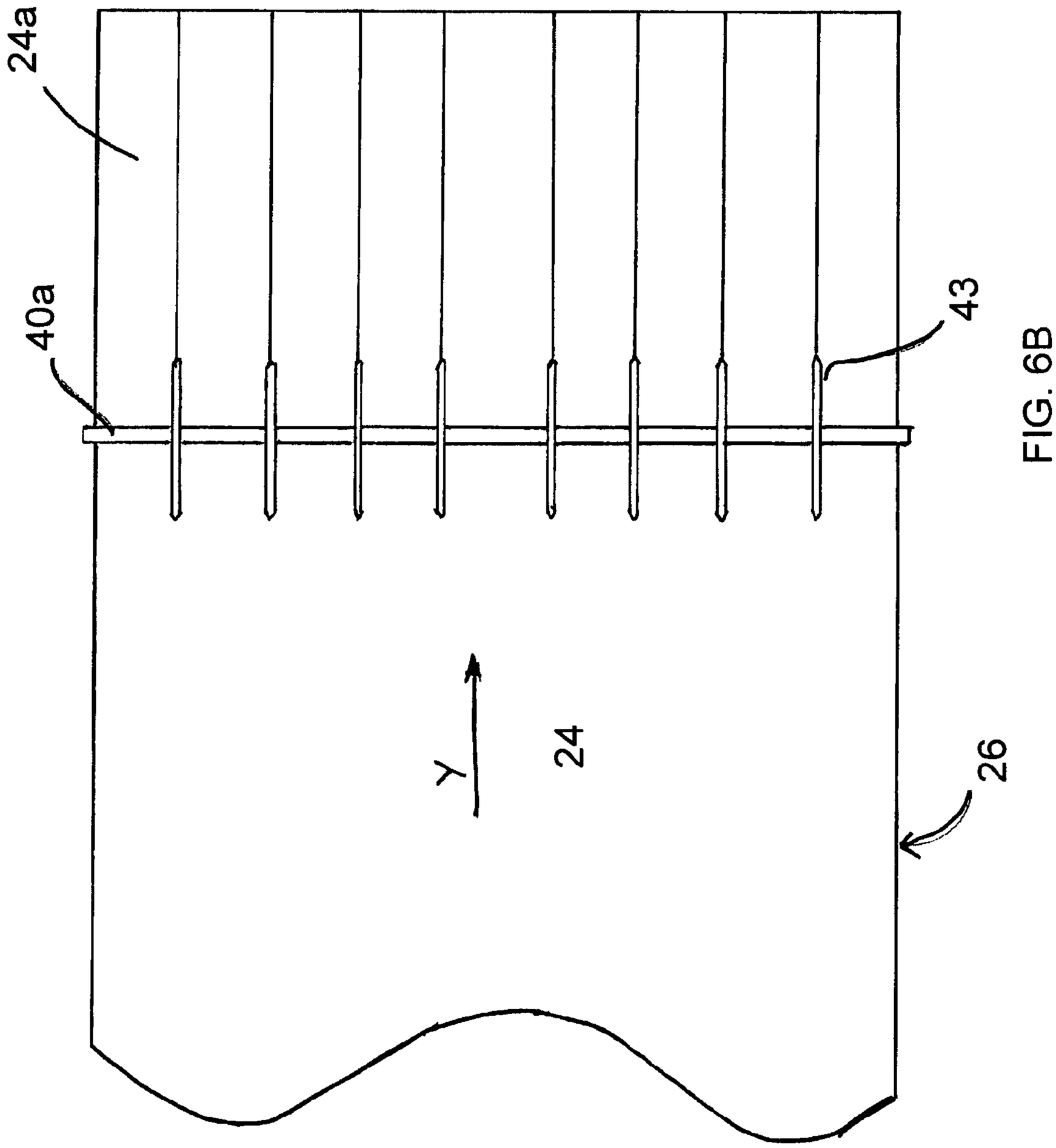


FIG. 6B

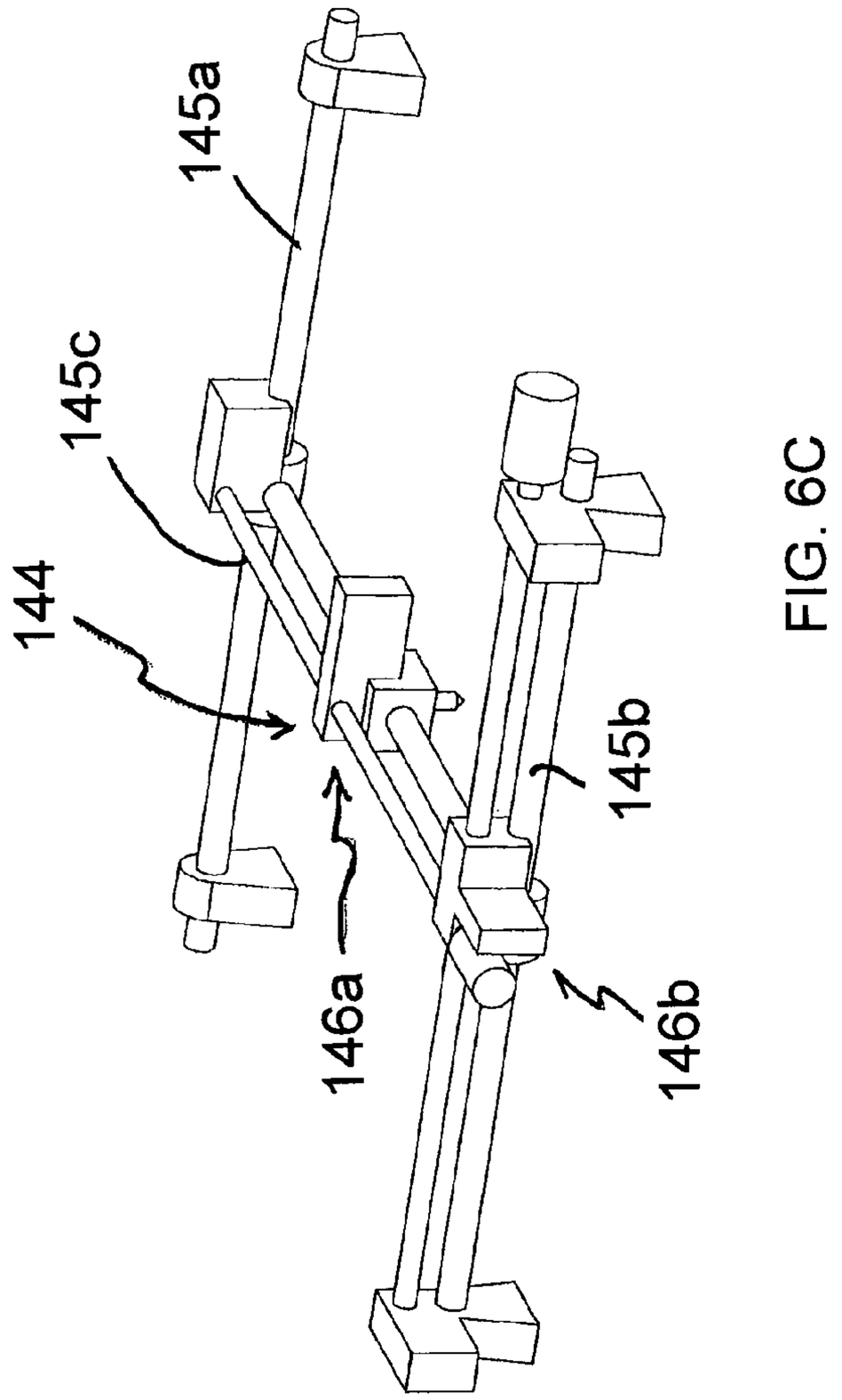


FIG. 6C

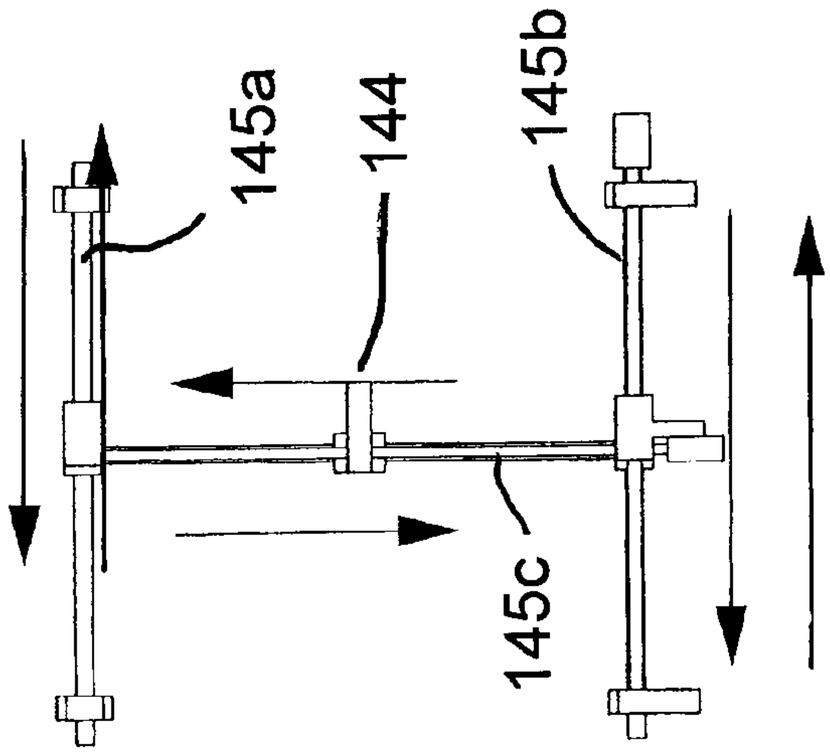


FIG. 6D

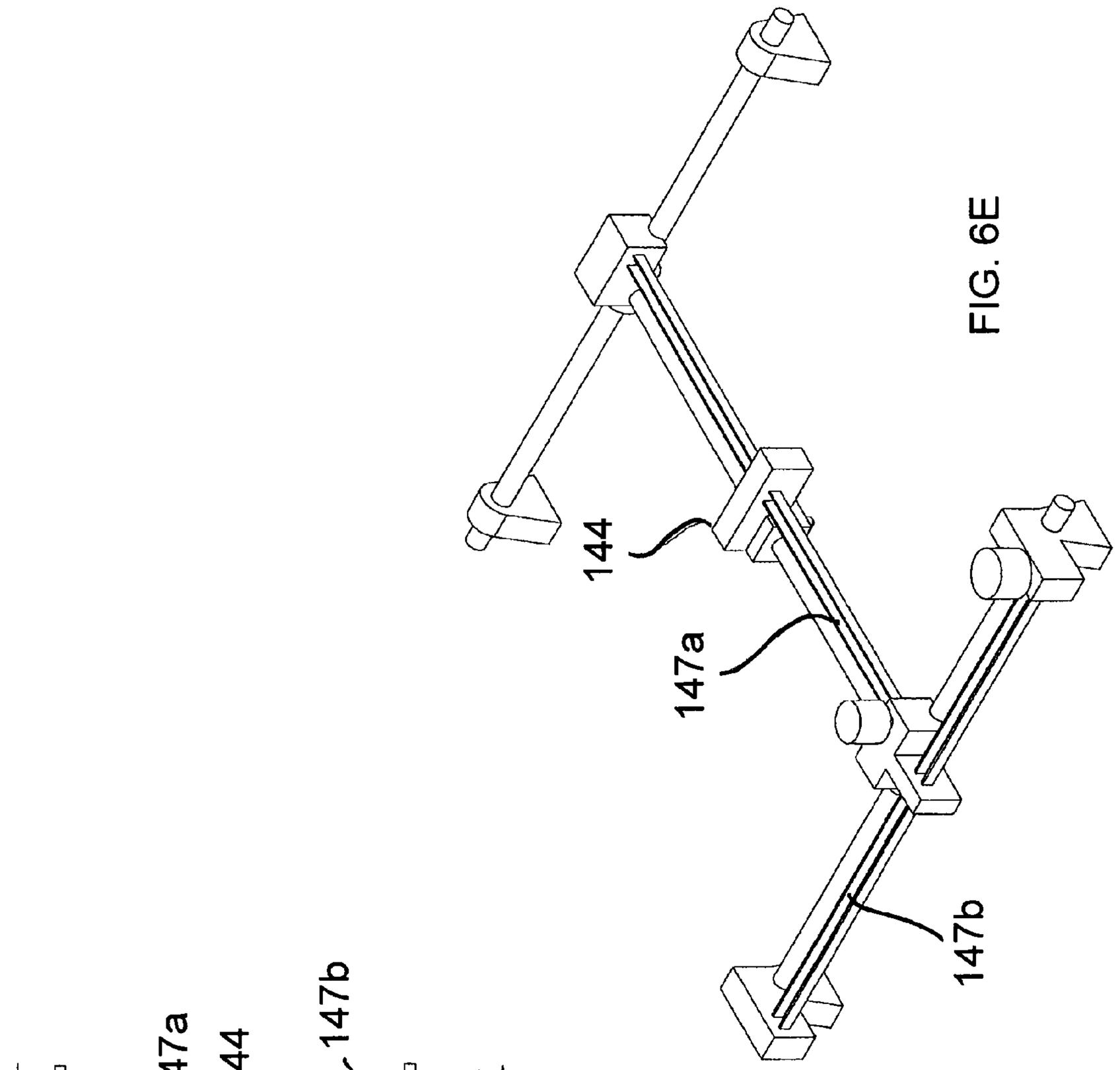


FIG. 6E

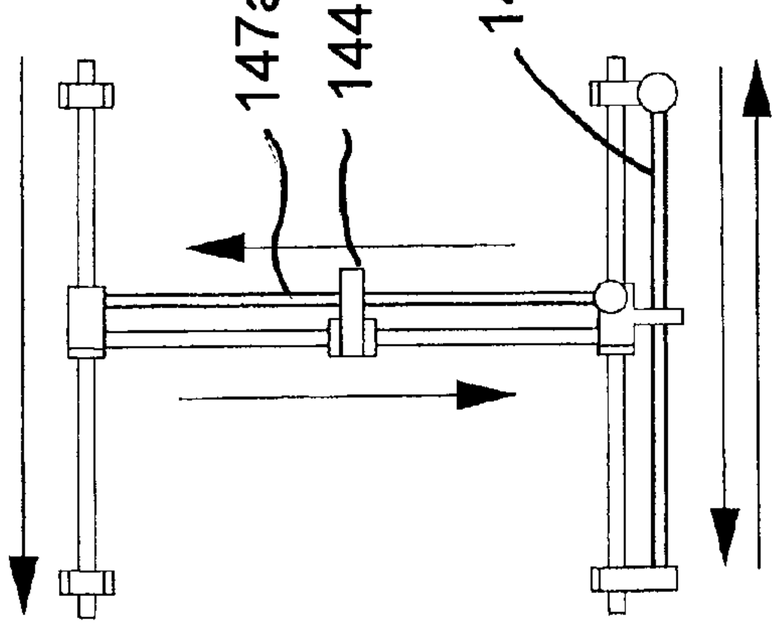


FIG. 6F

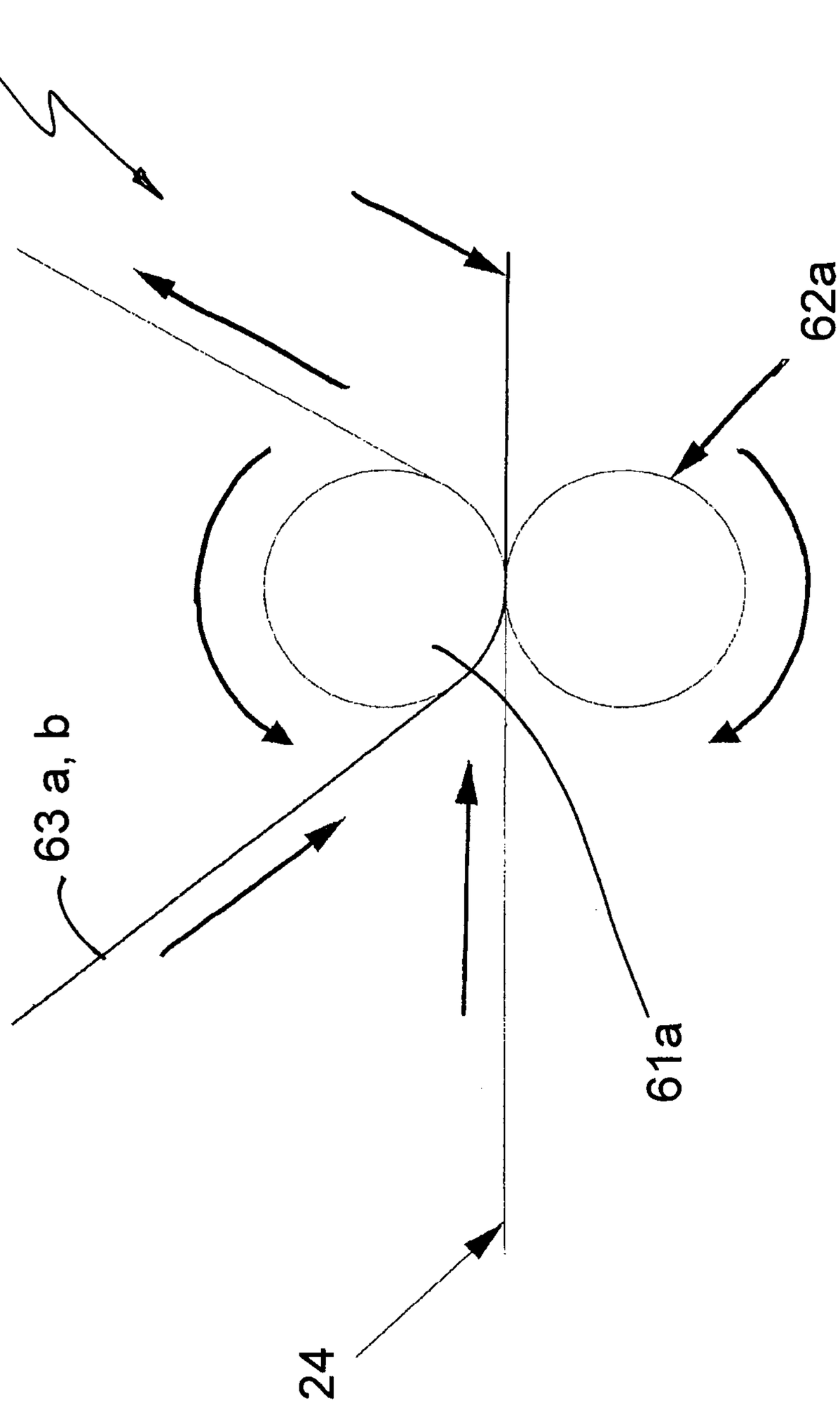


FIG. 7

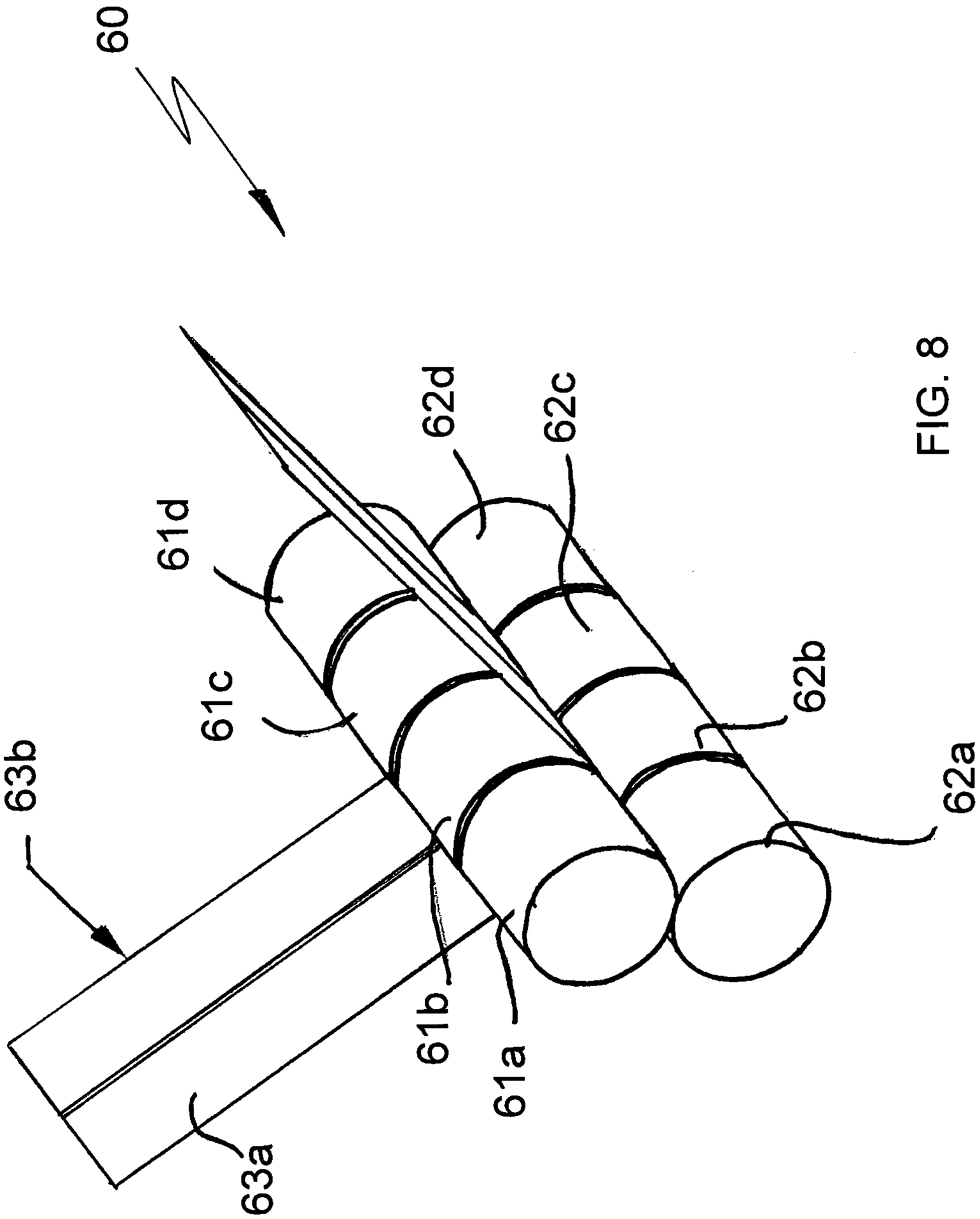


FIG. 8

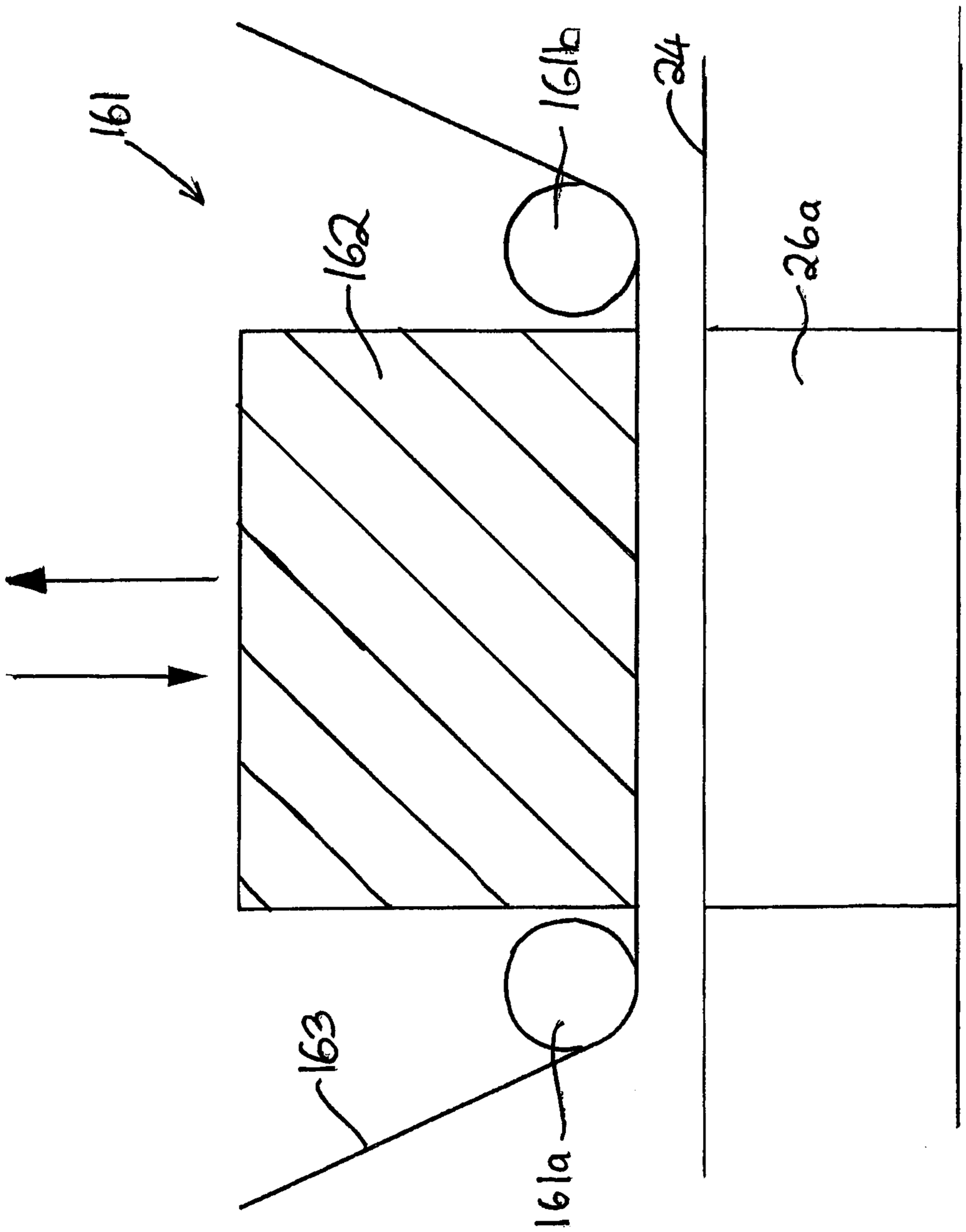


FIG. 8A

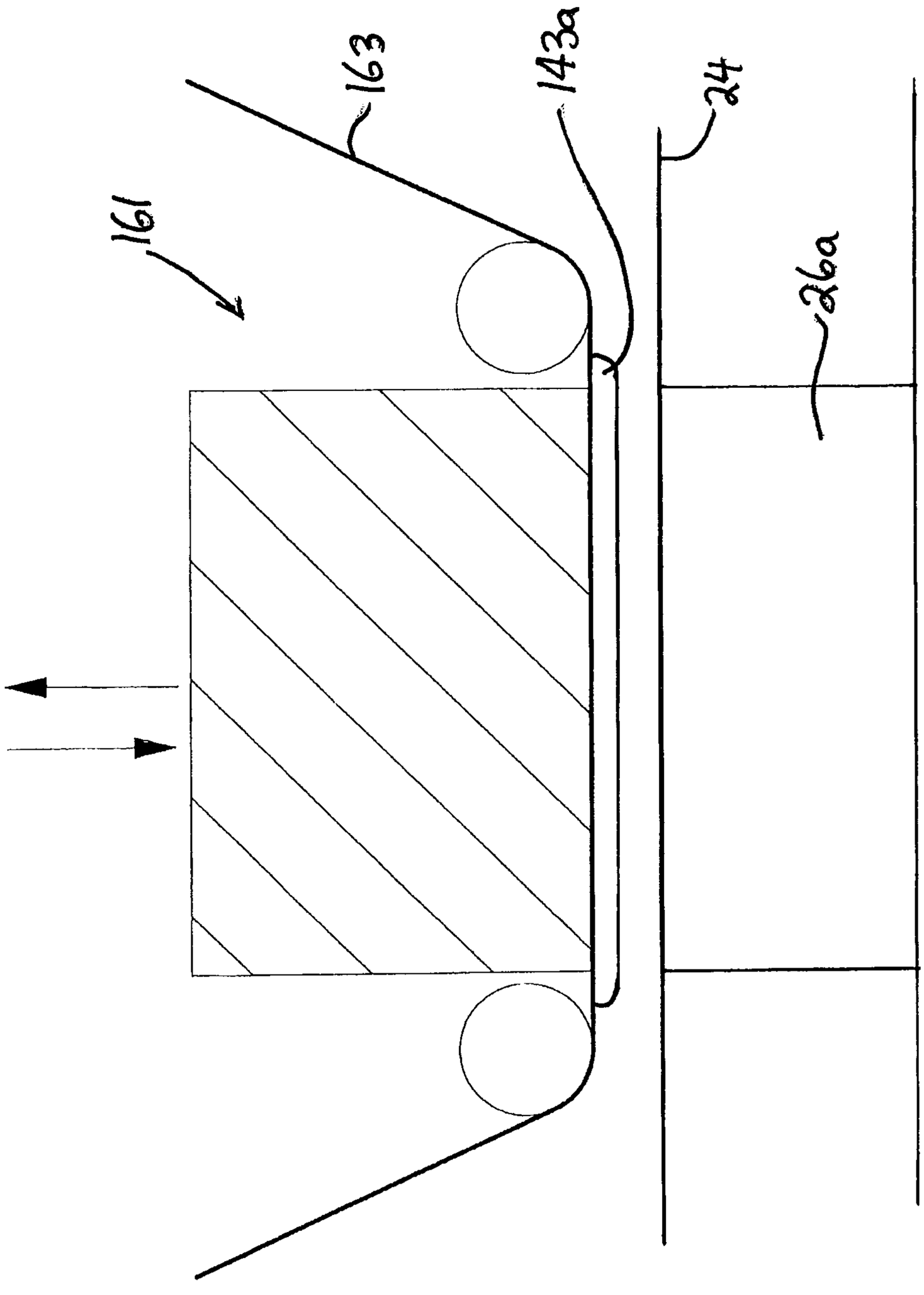
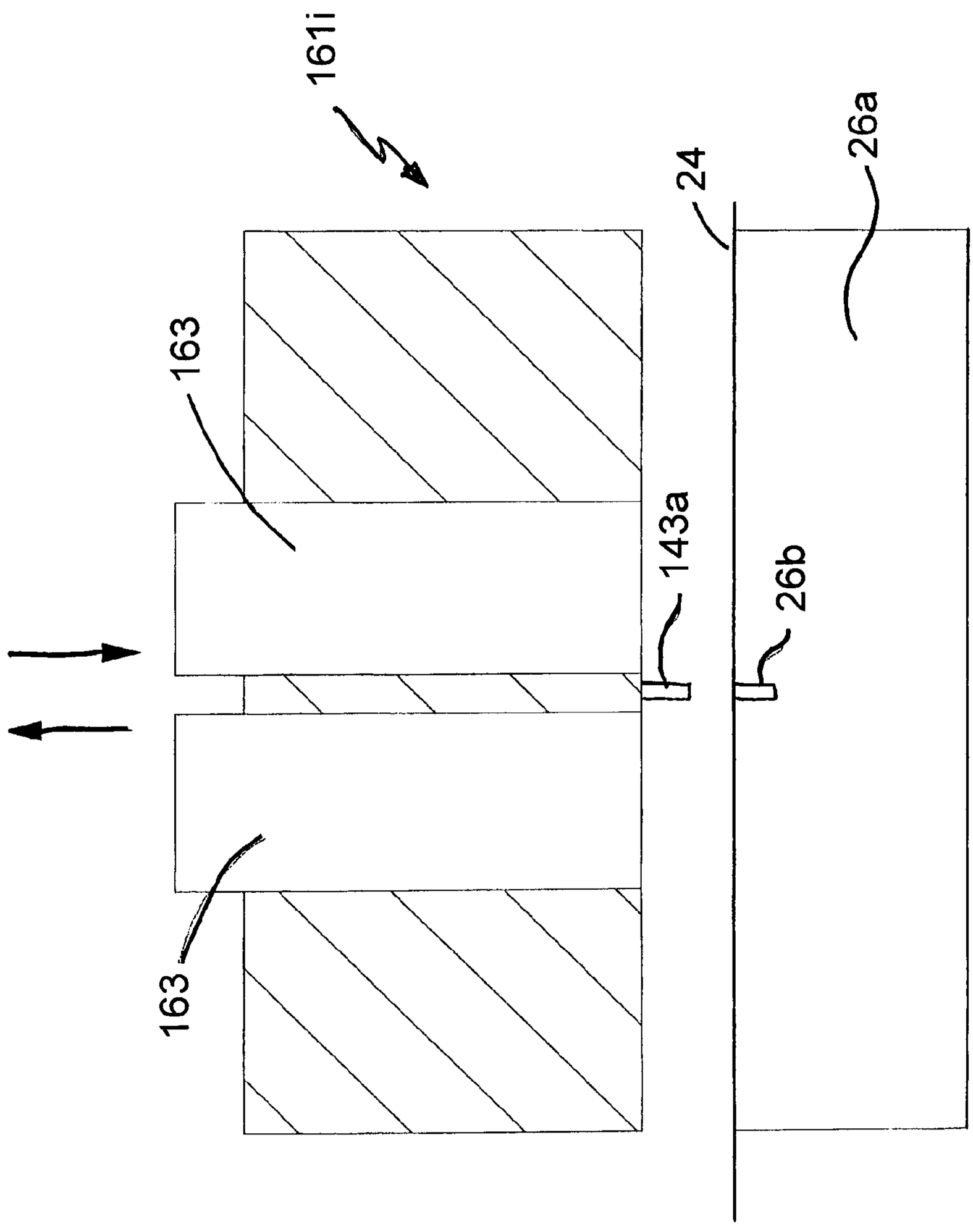


FIG. 8B



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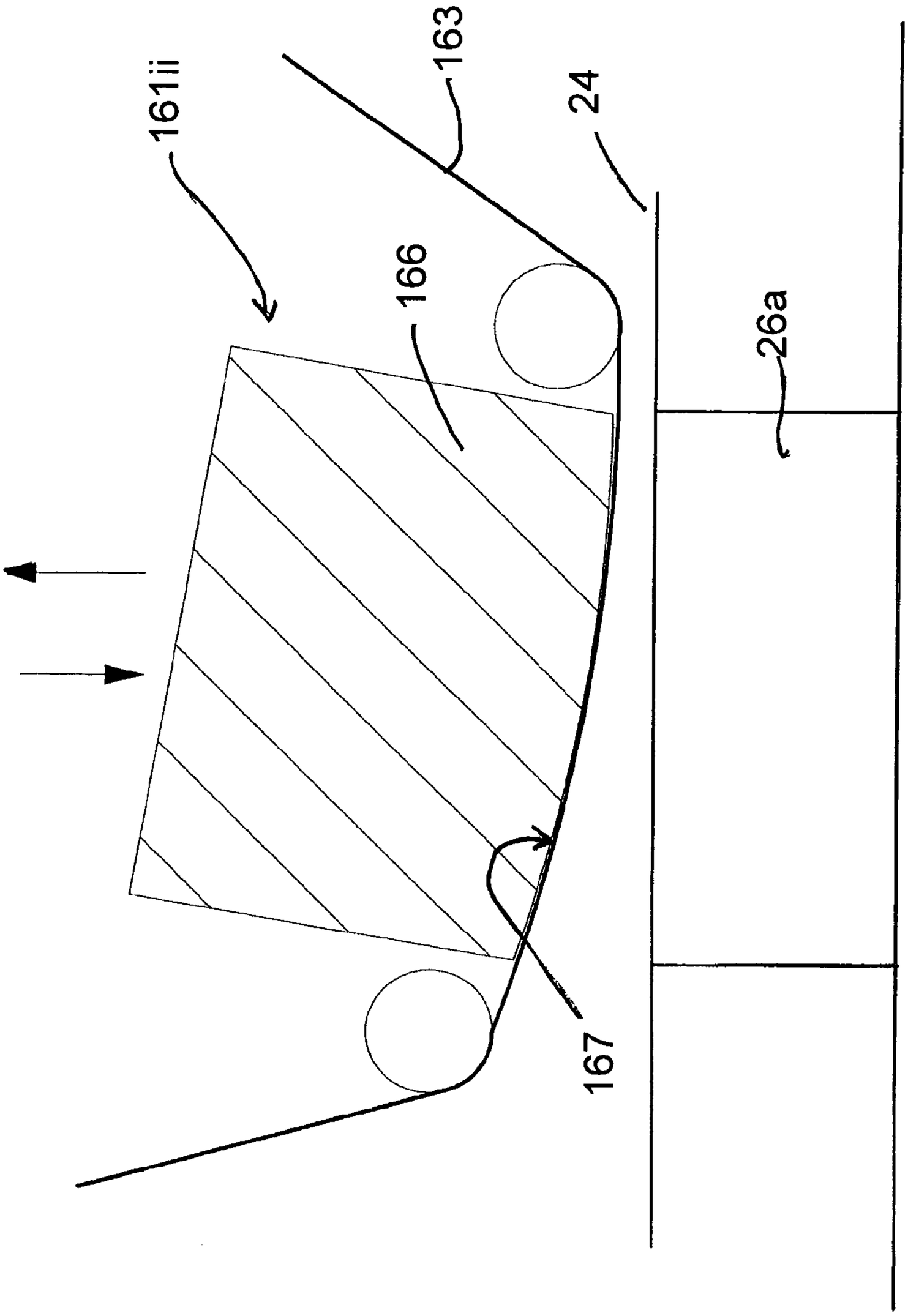

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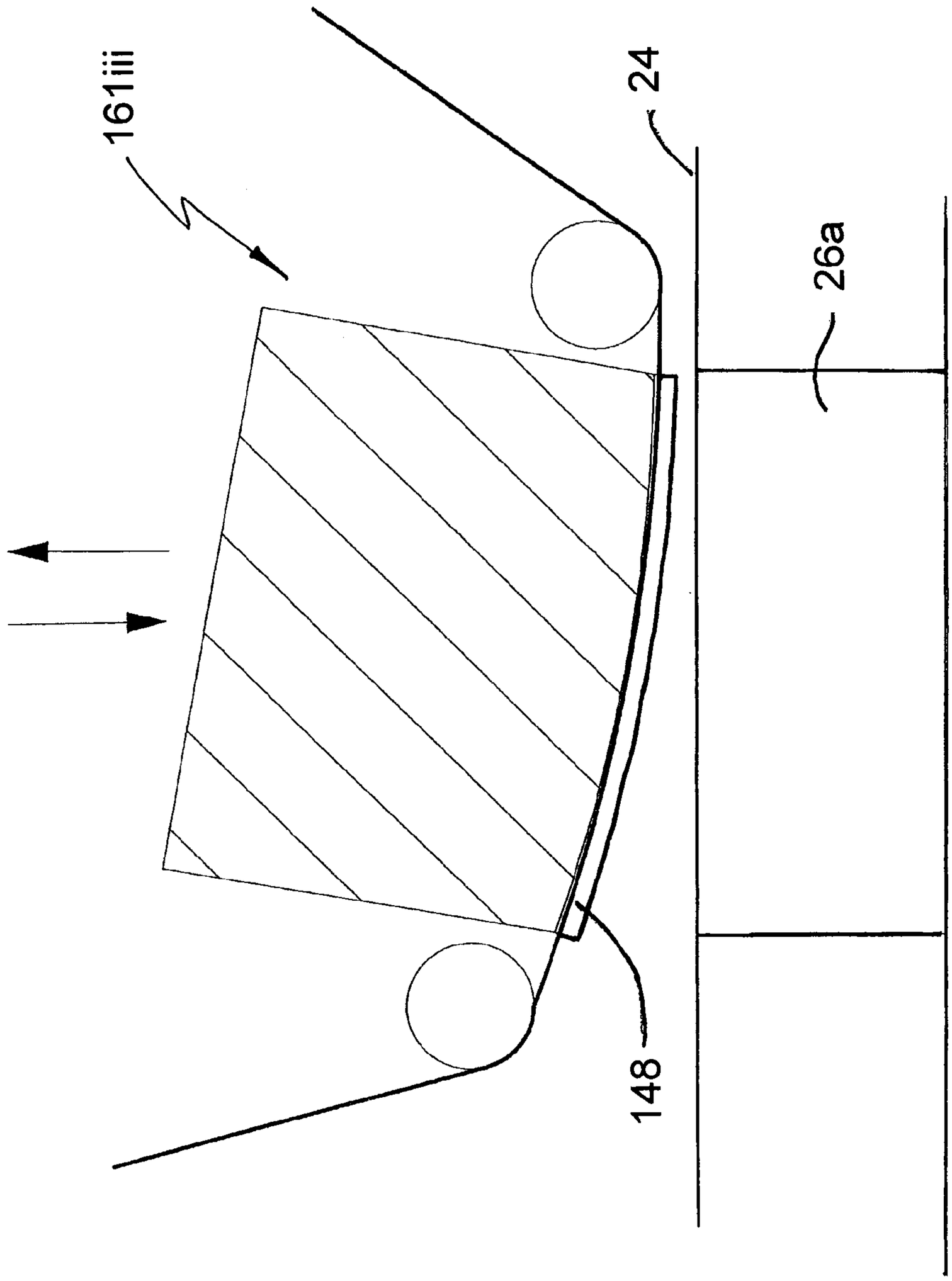

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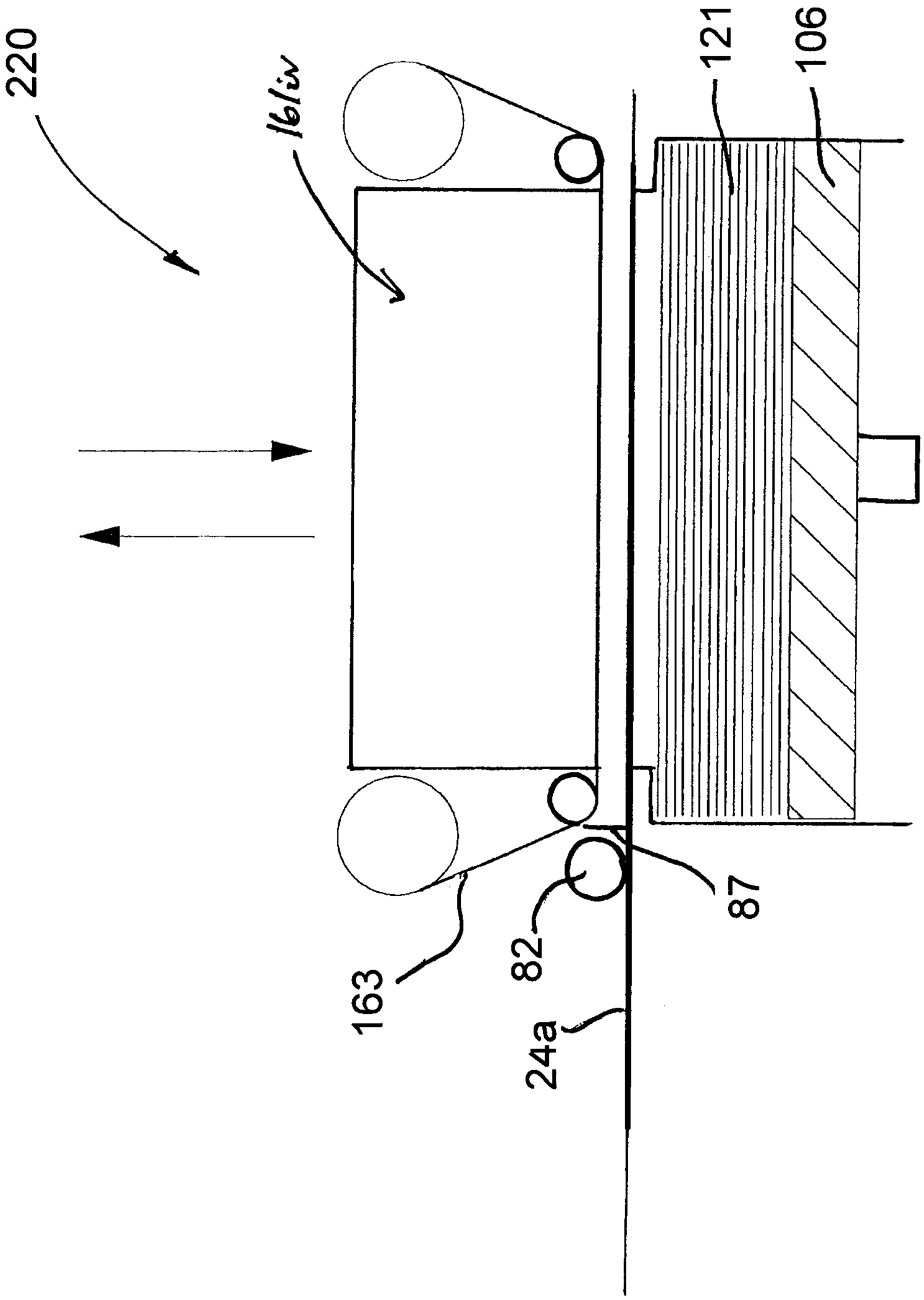

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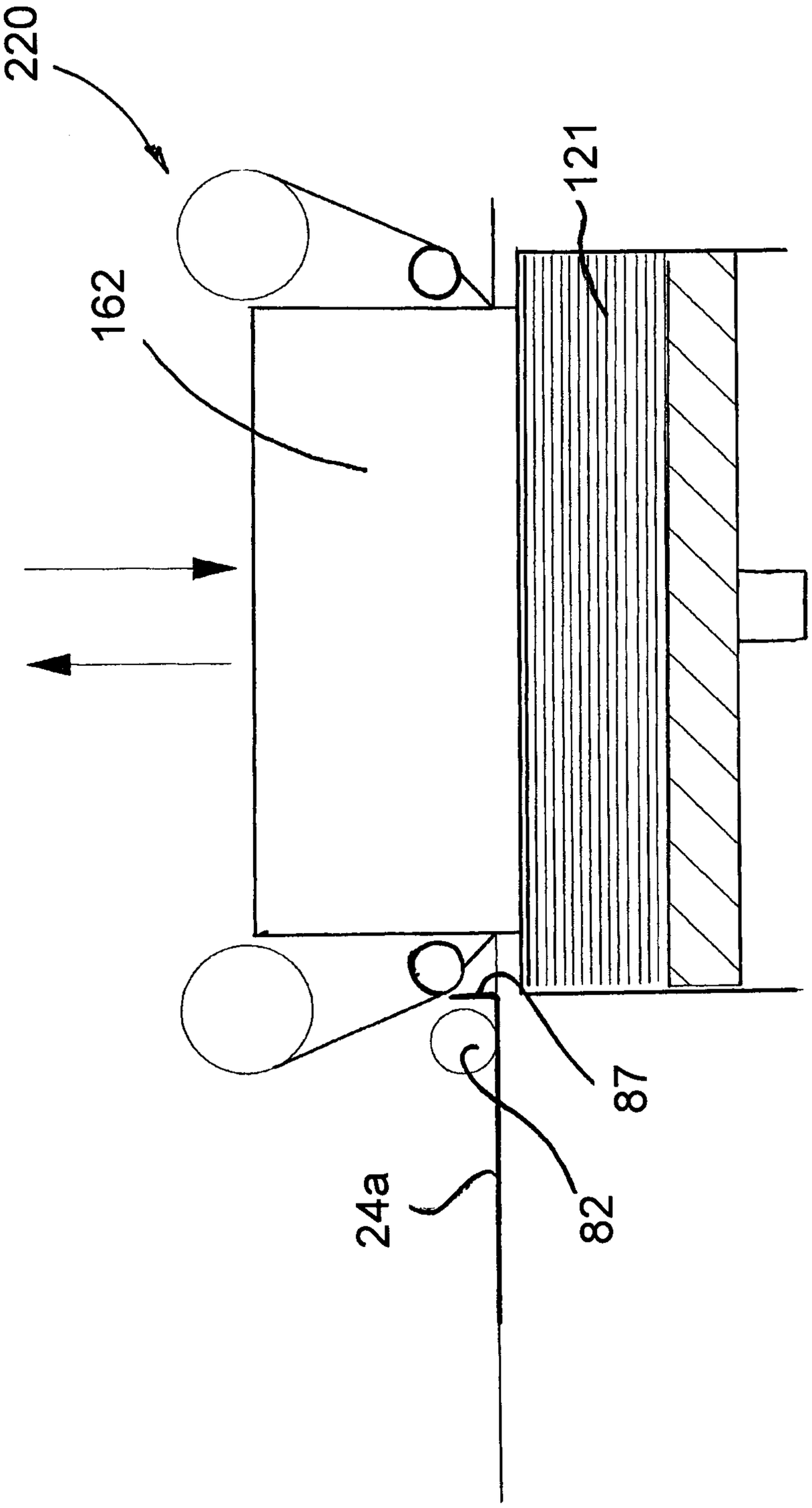
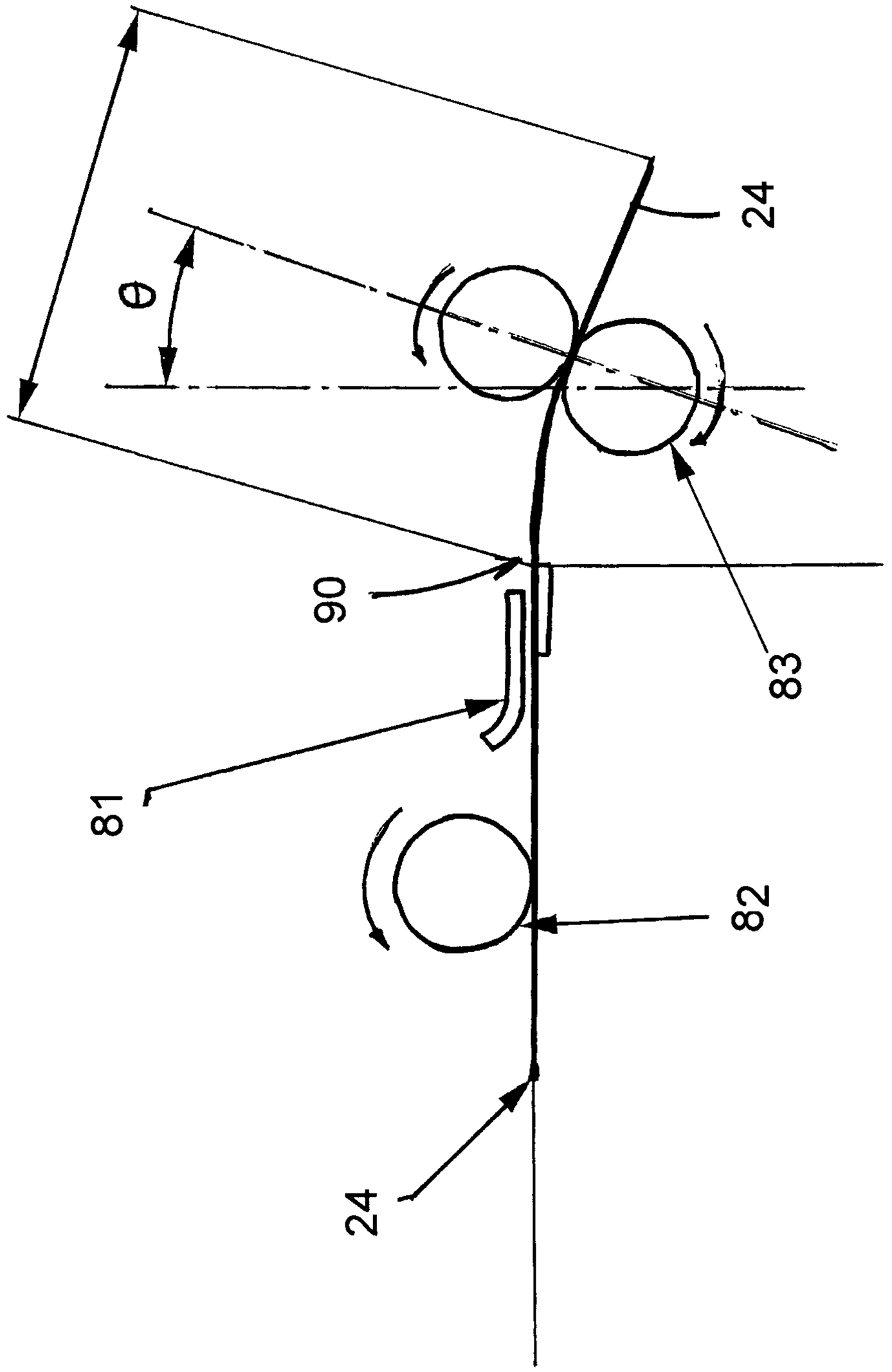


FIG. 8G



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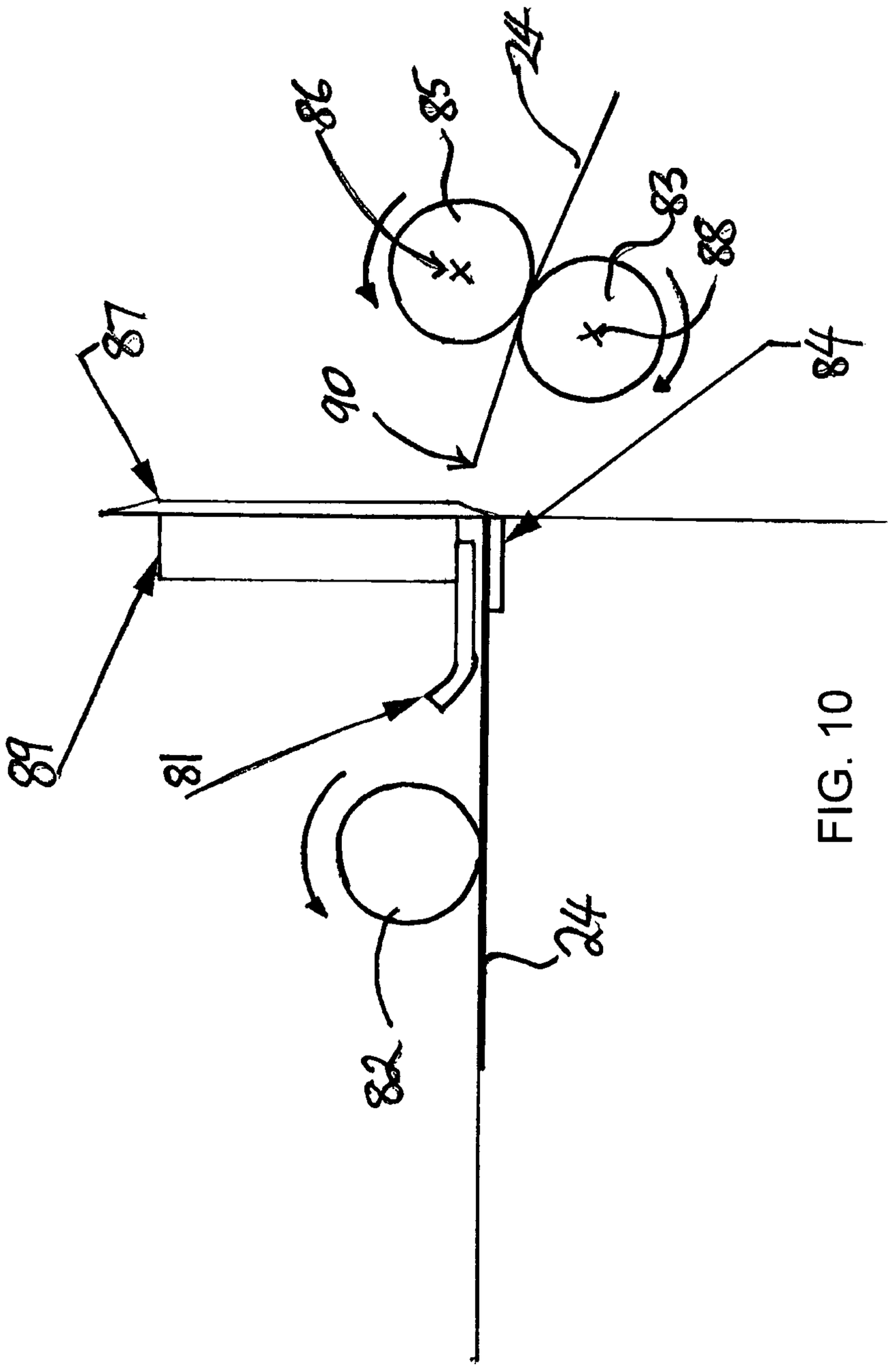
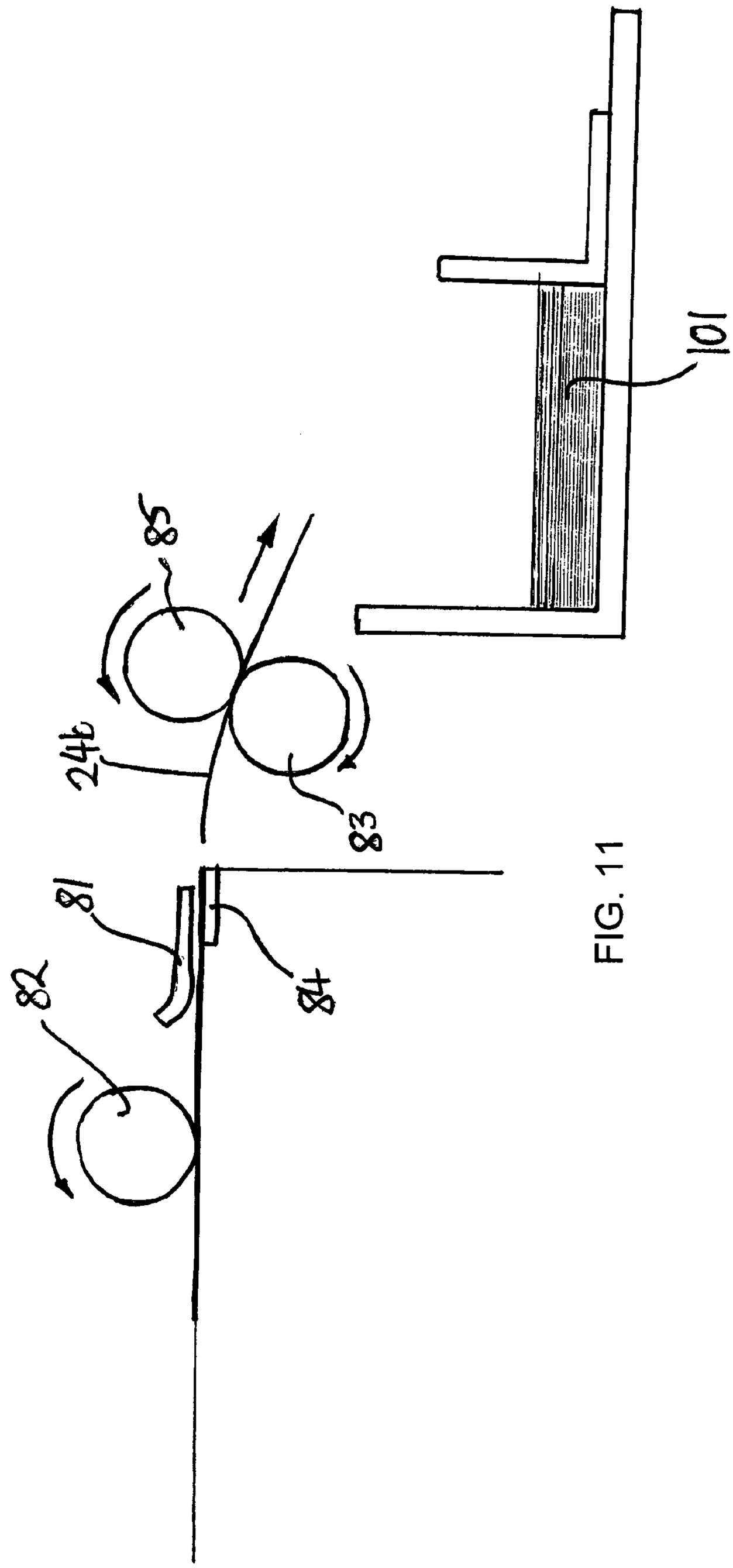


FIG. 10



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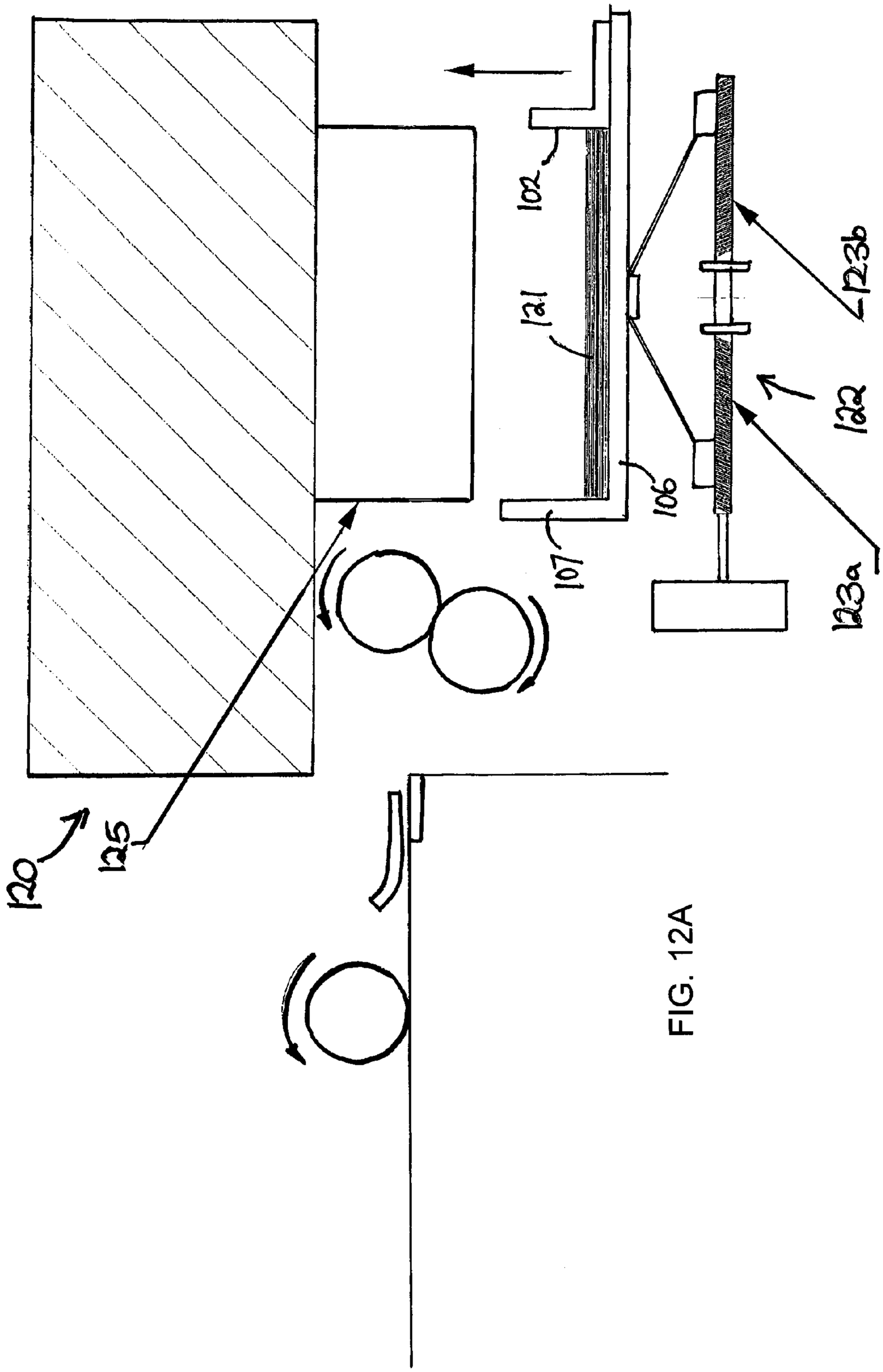

FIG. 12A

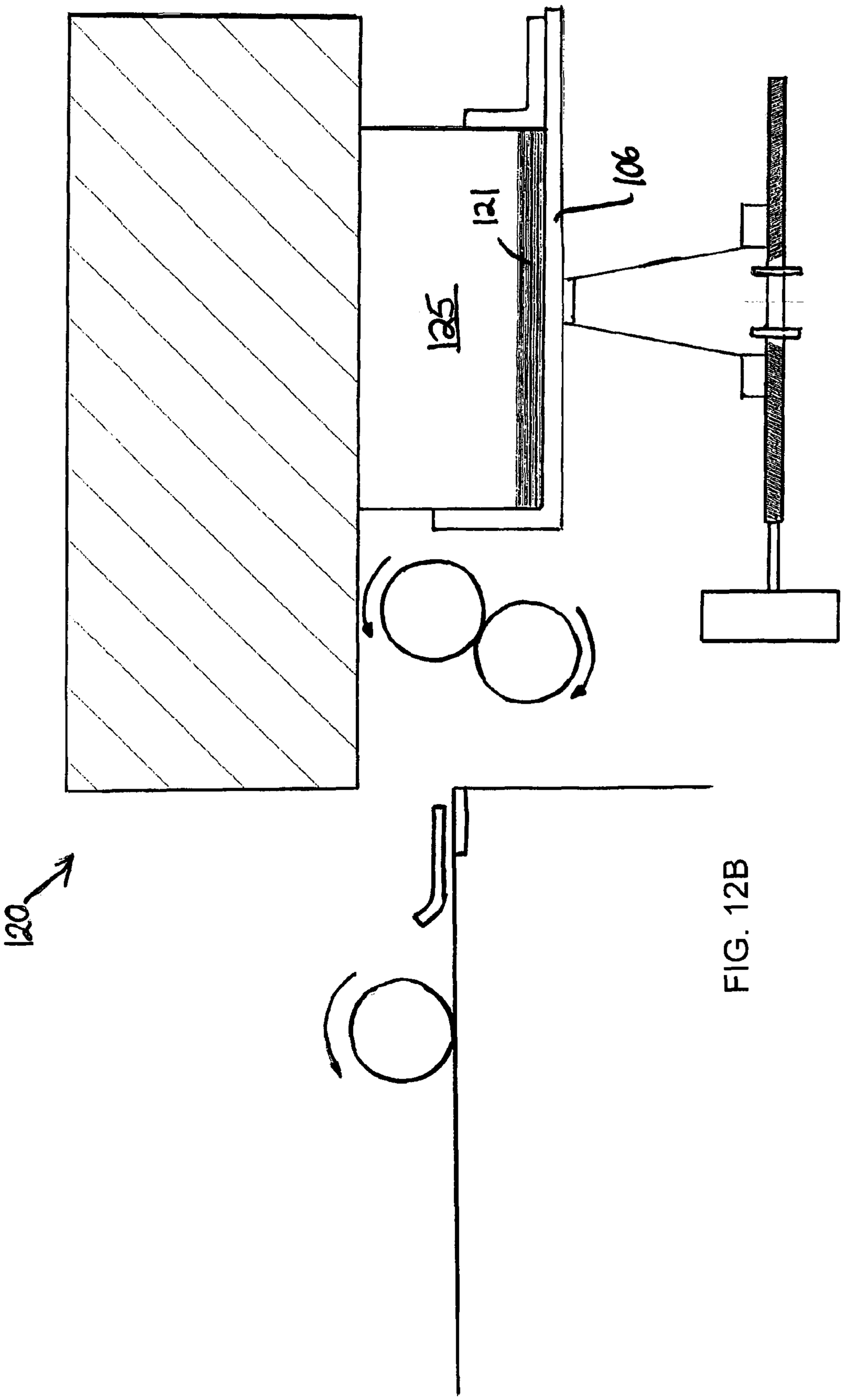

FIG. 12B

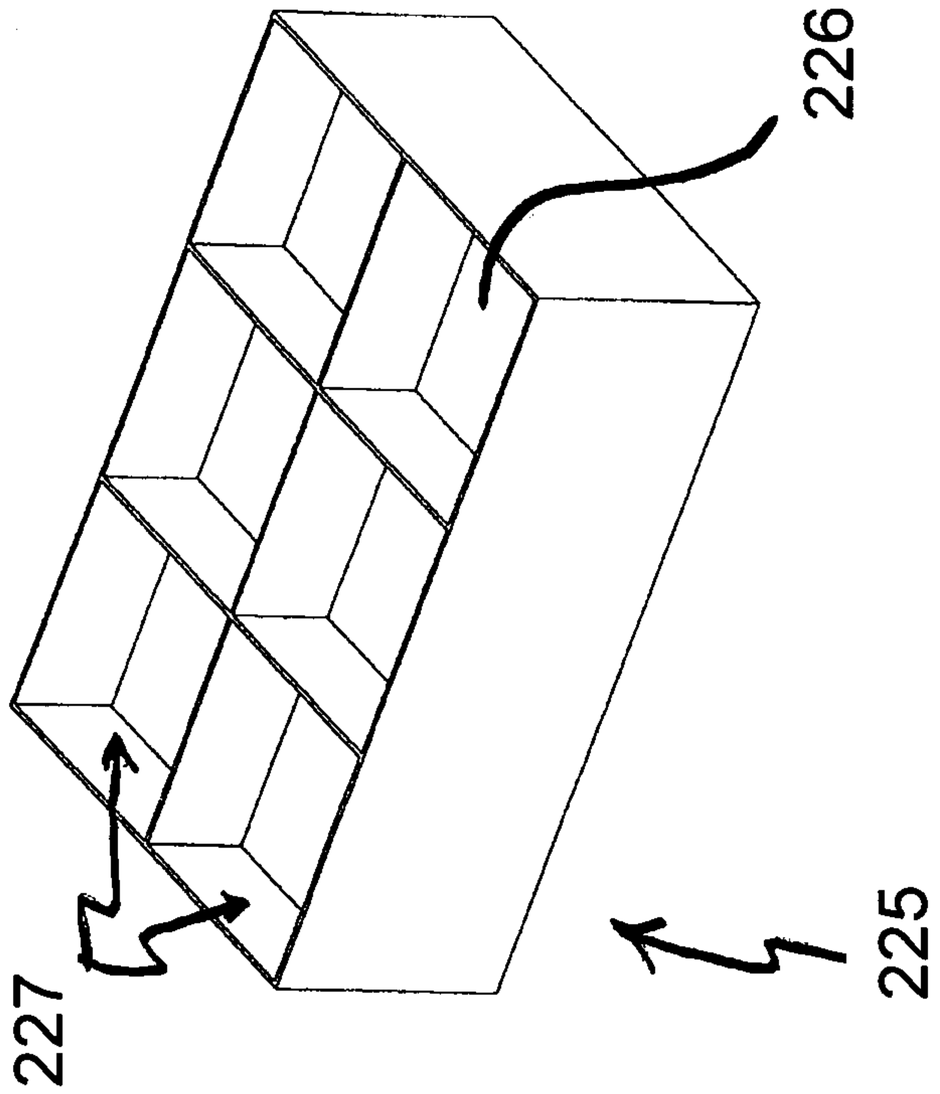

FIG. 13B

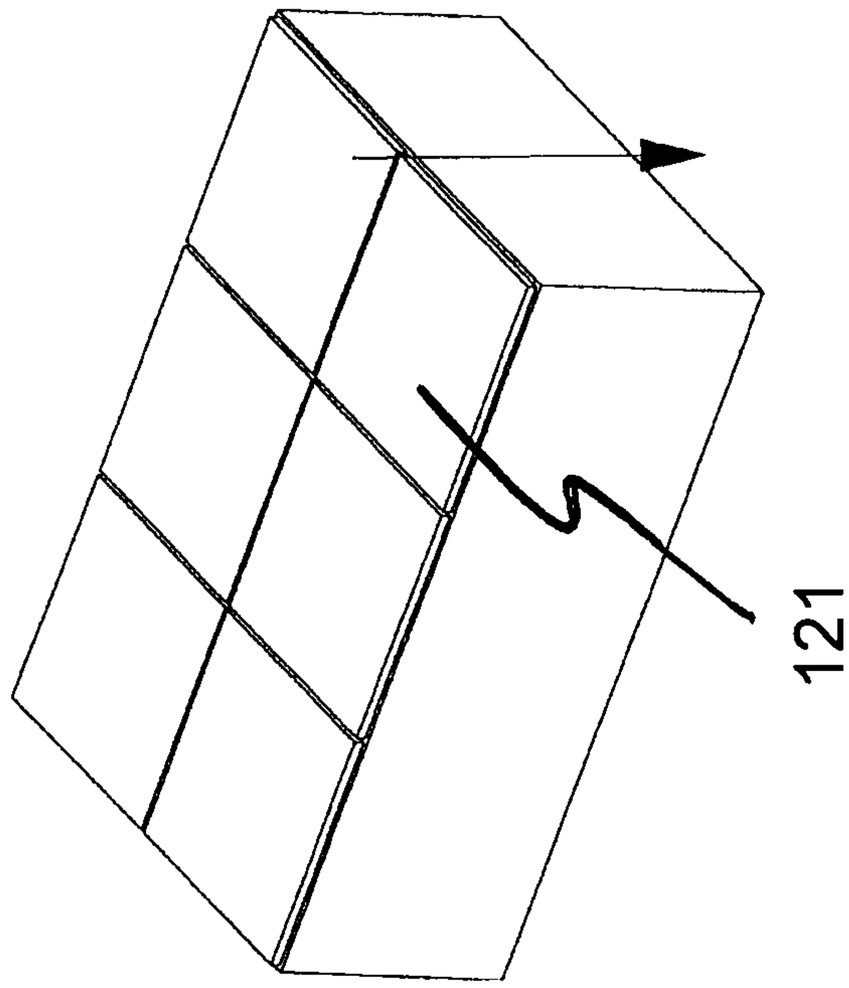

FIG. 13A

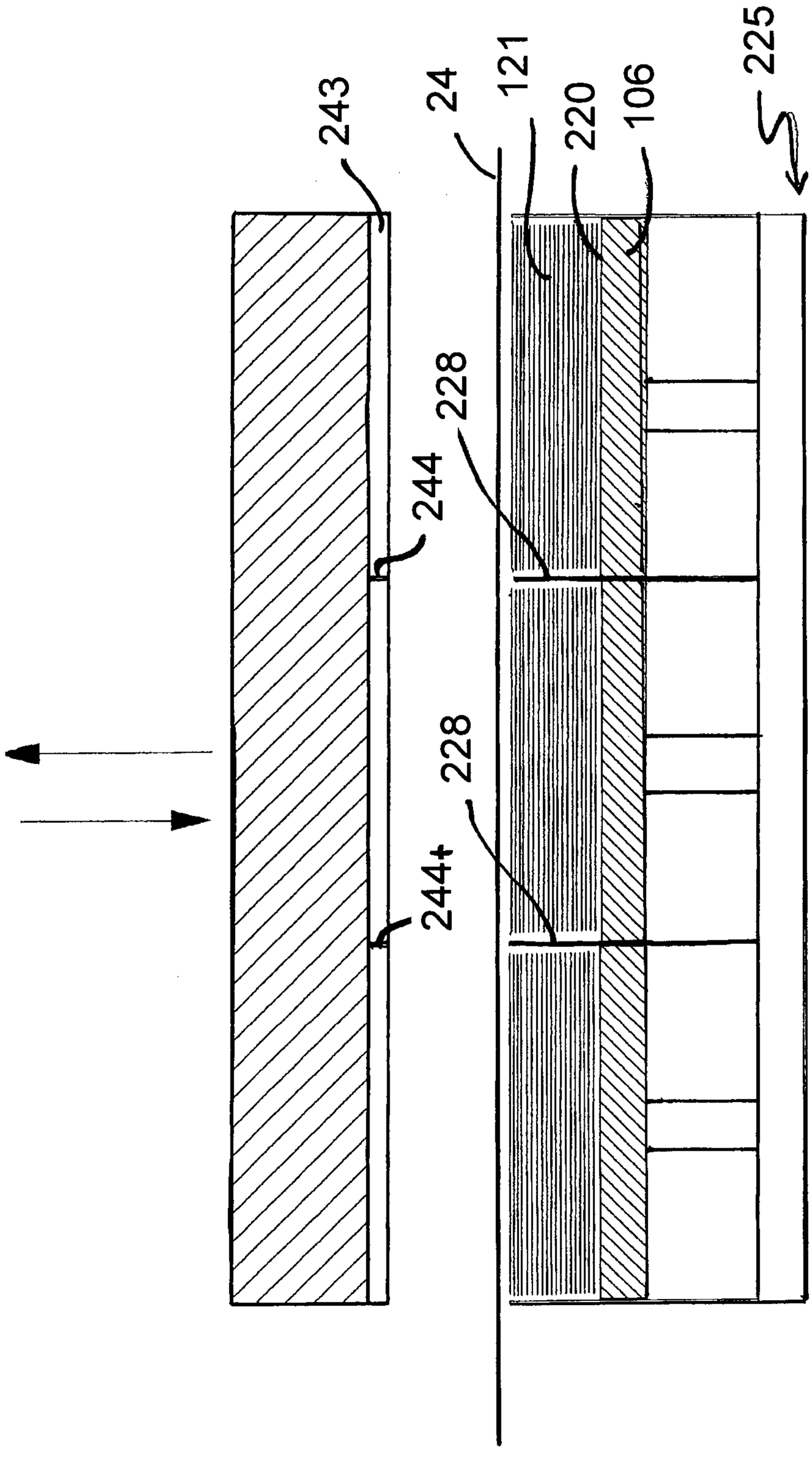

FIG. 13C

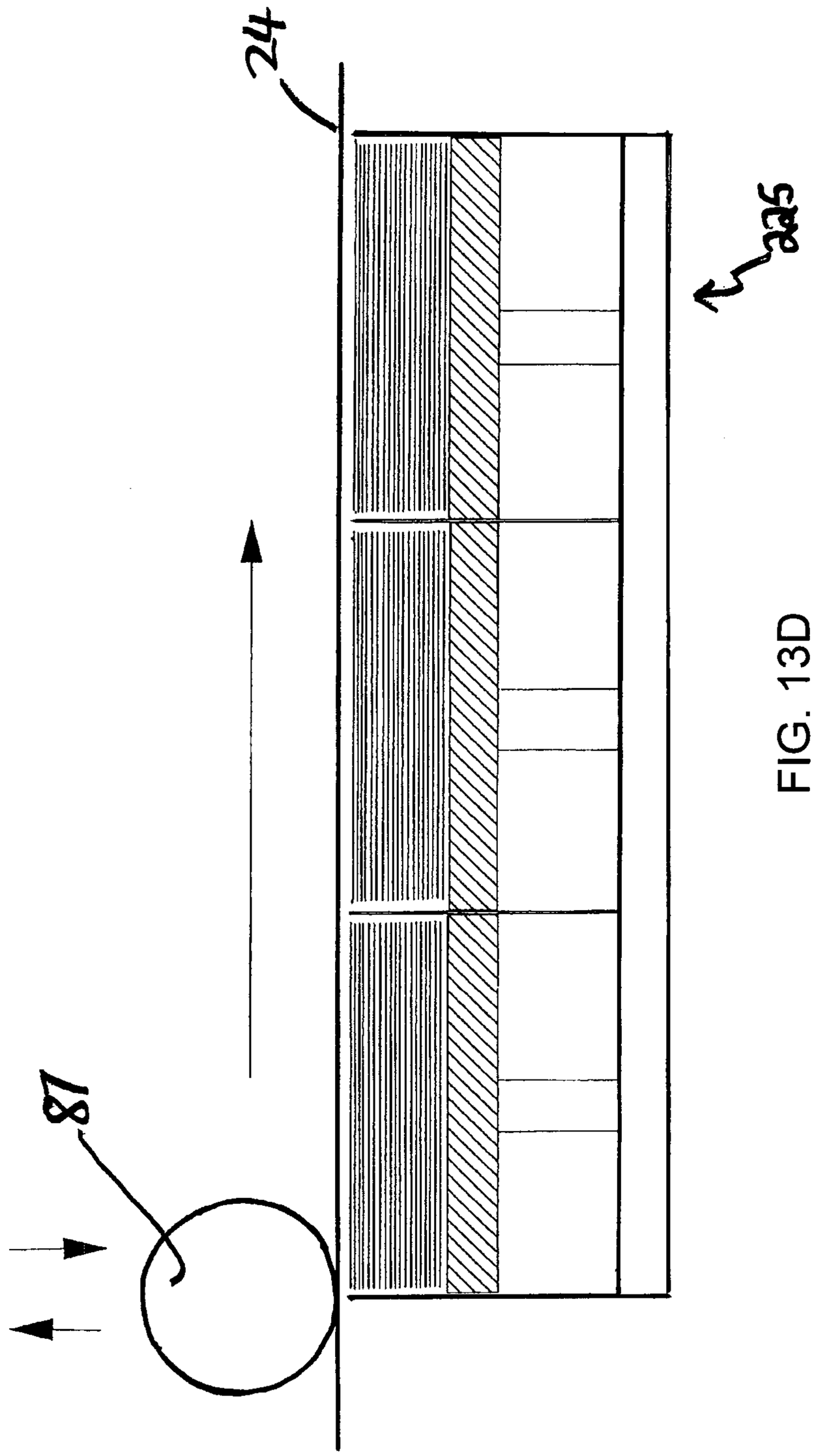

FIG. 13D

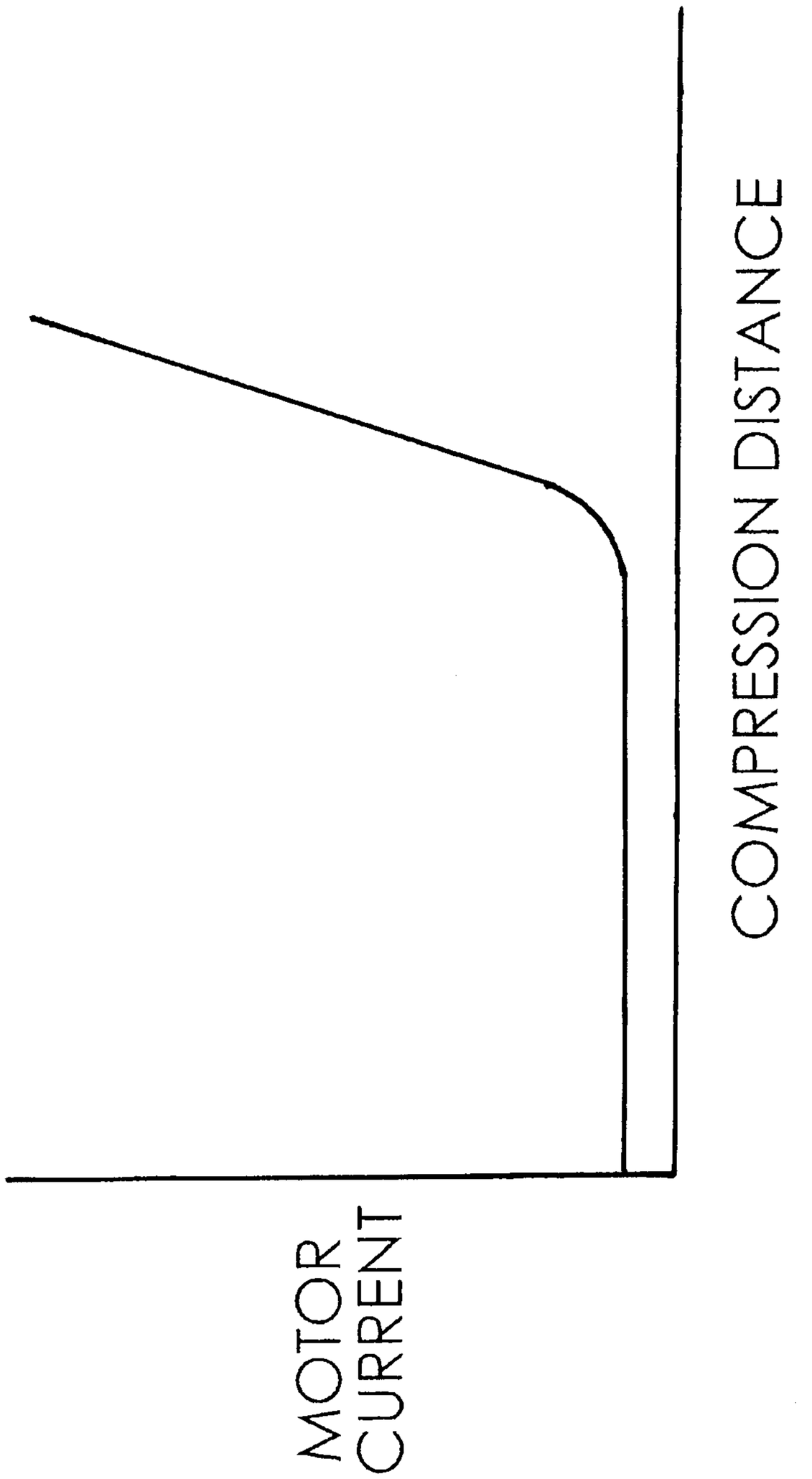

FIG. 14

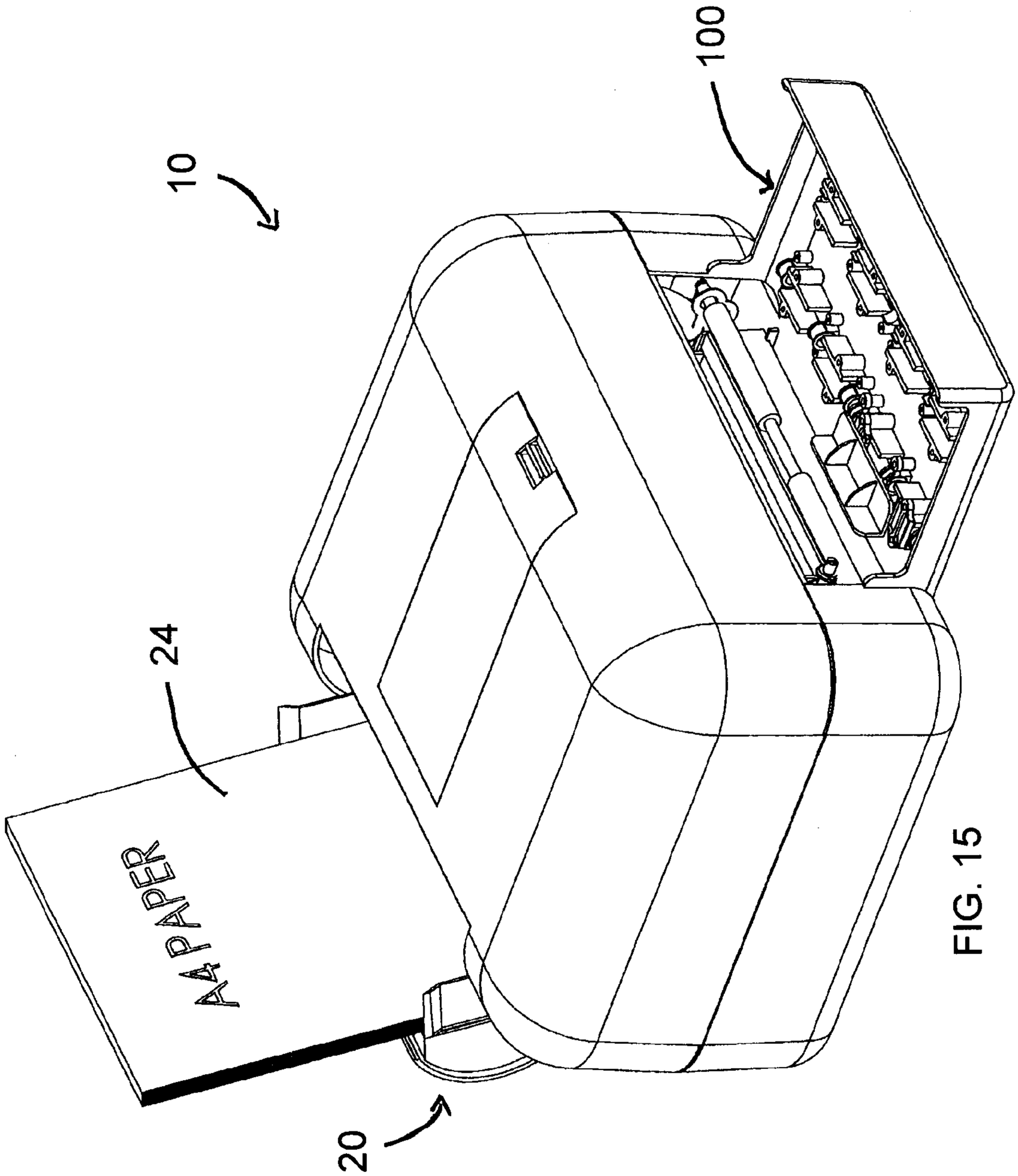

FIG. 15

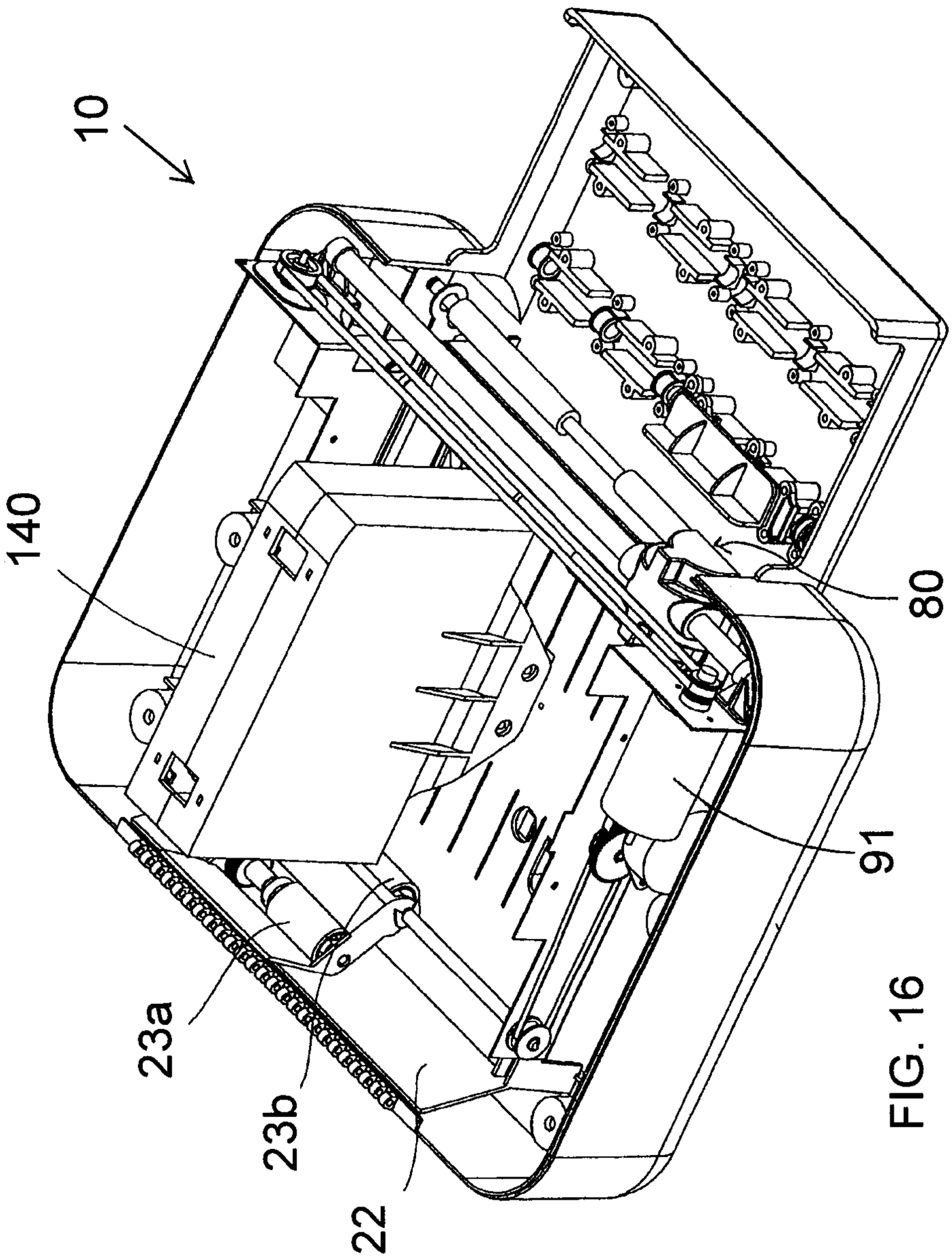

FIG. 16

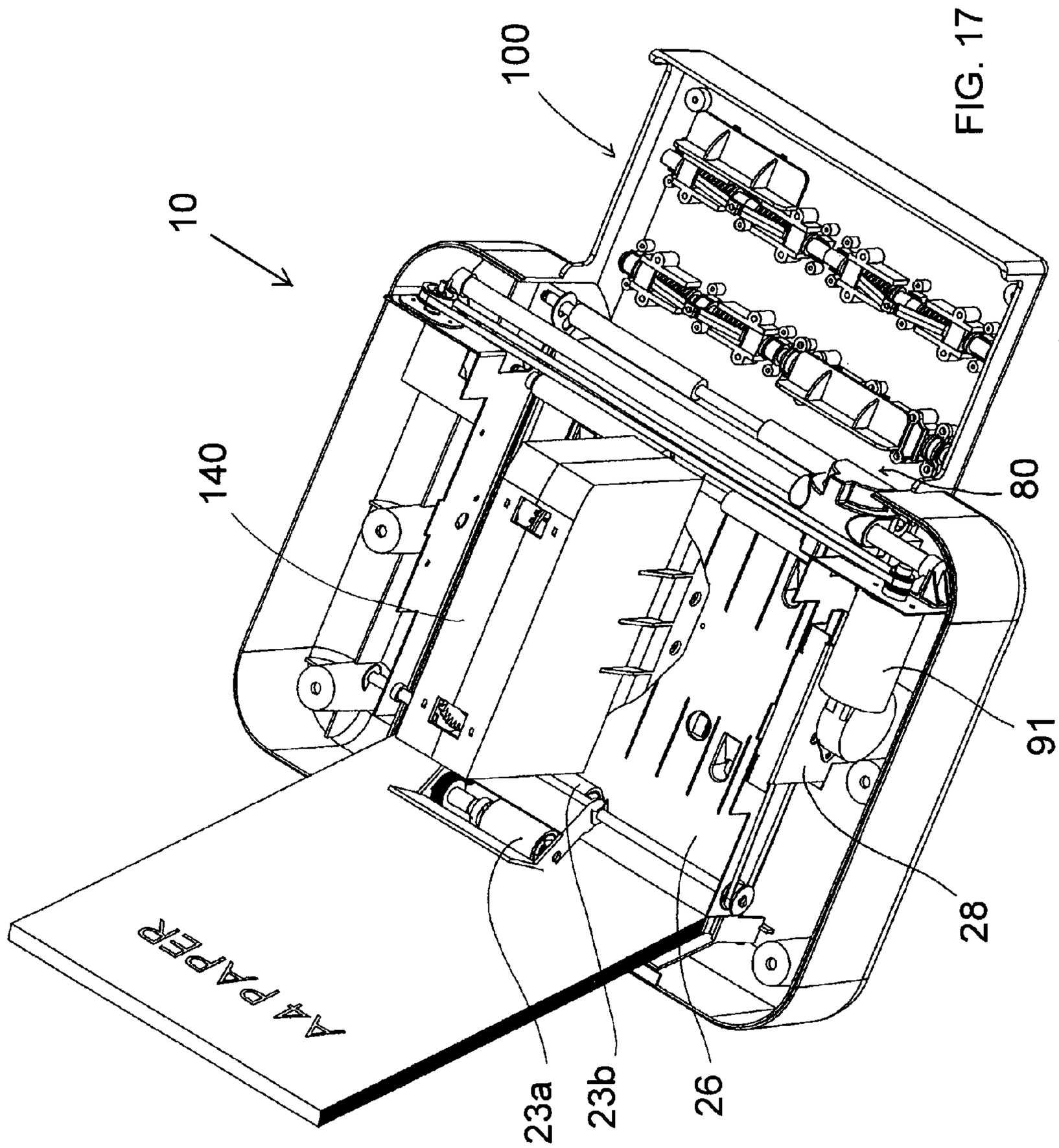

FIG. 17

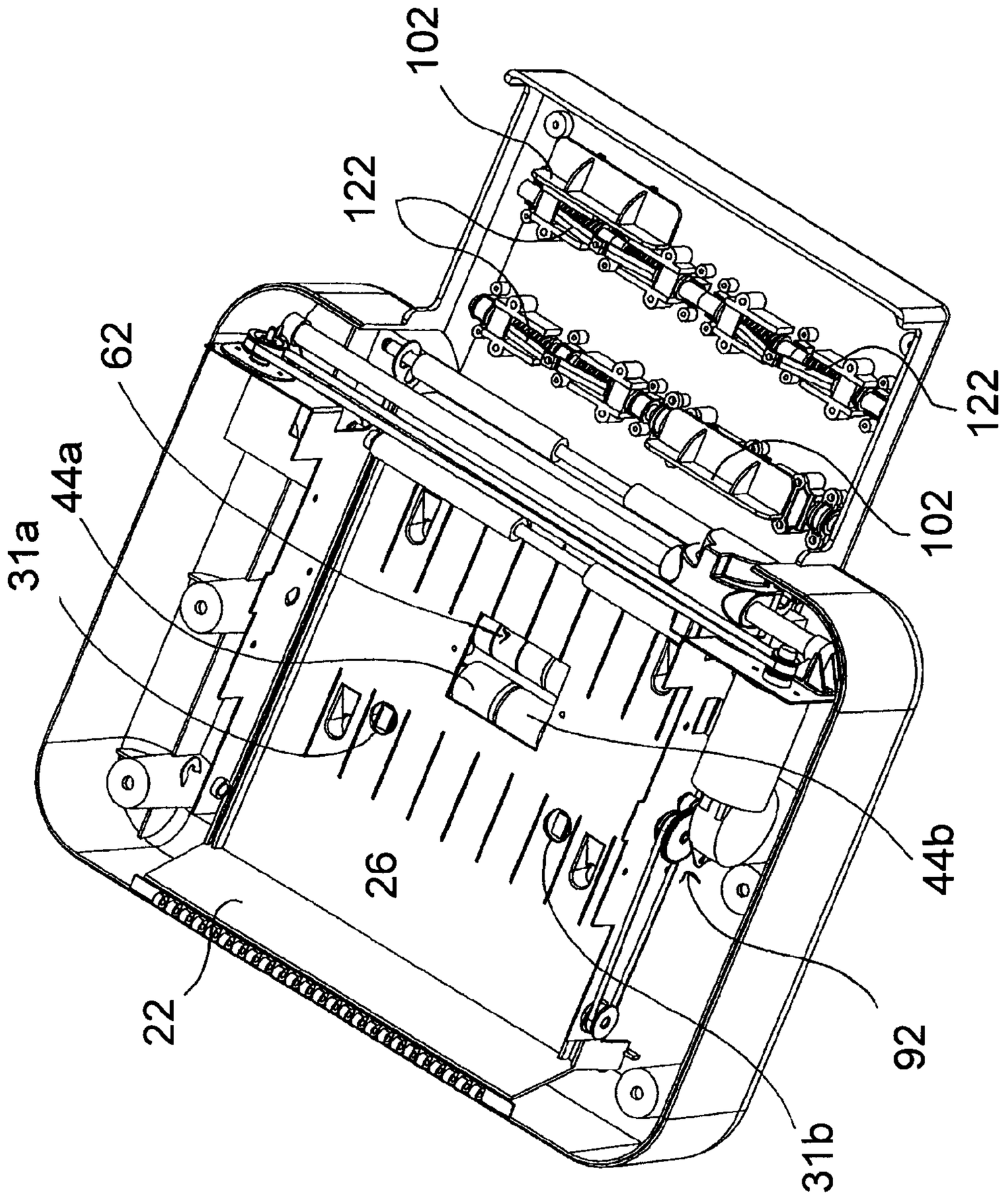

FIG. 18

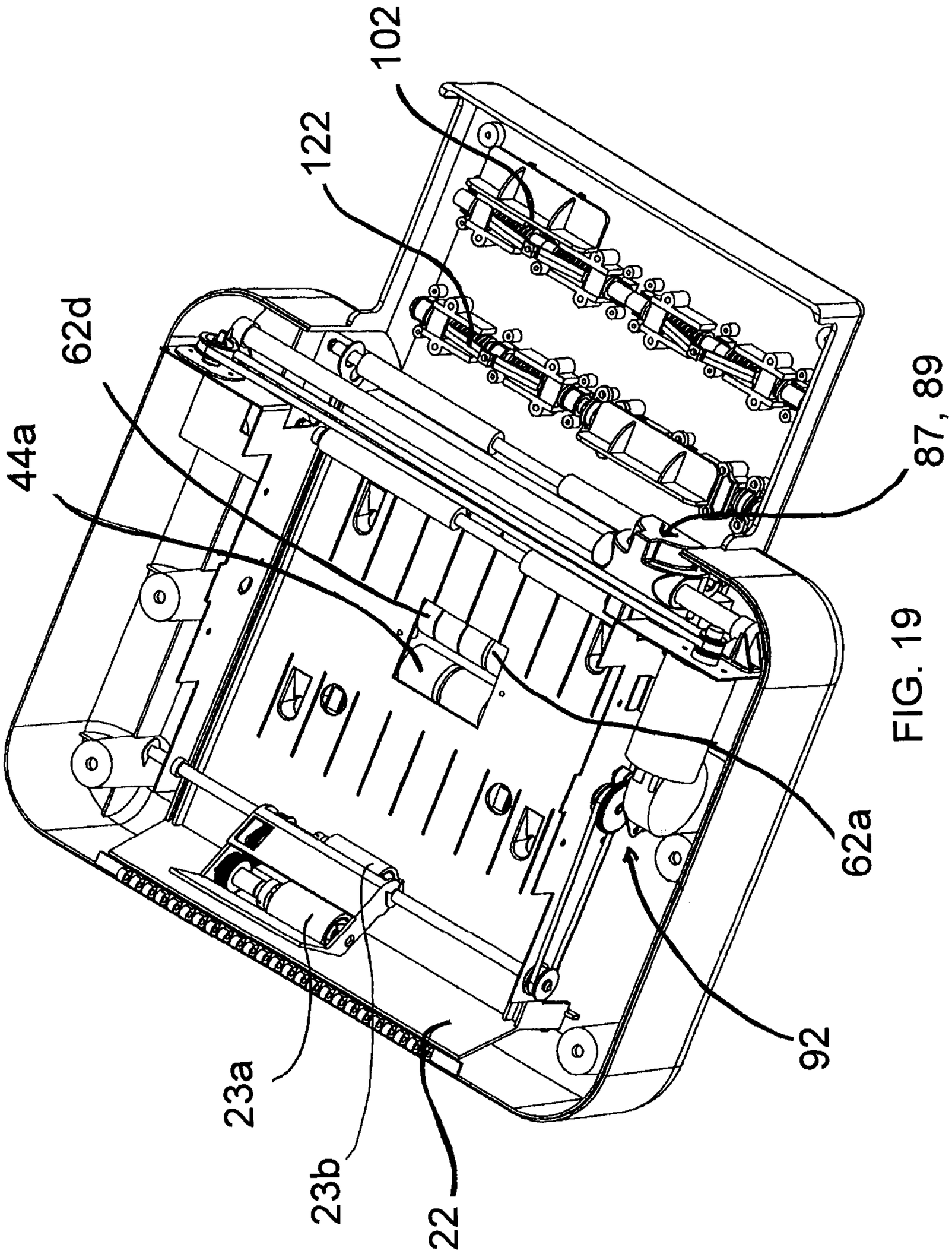

FIG. 19

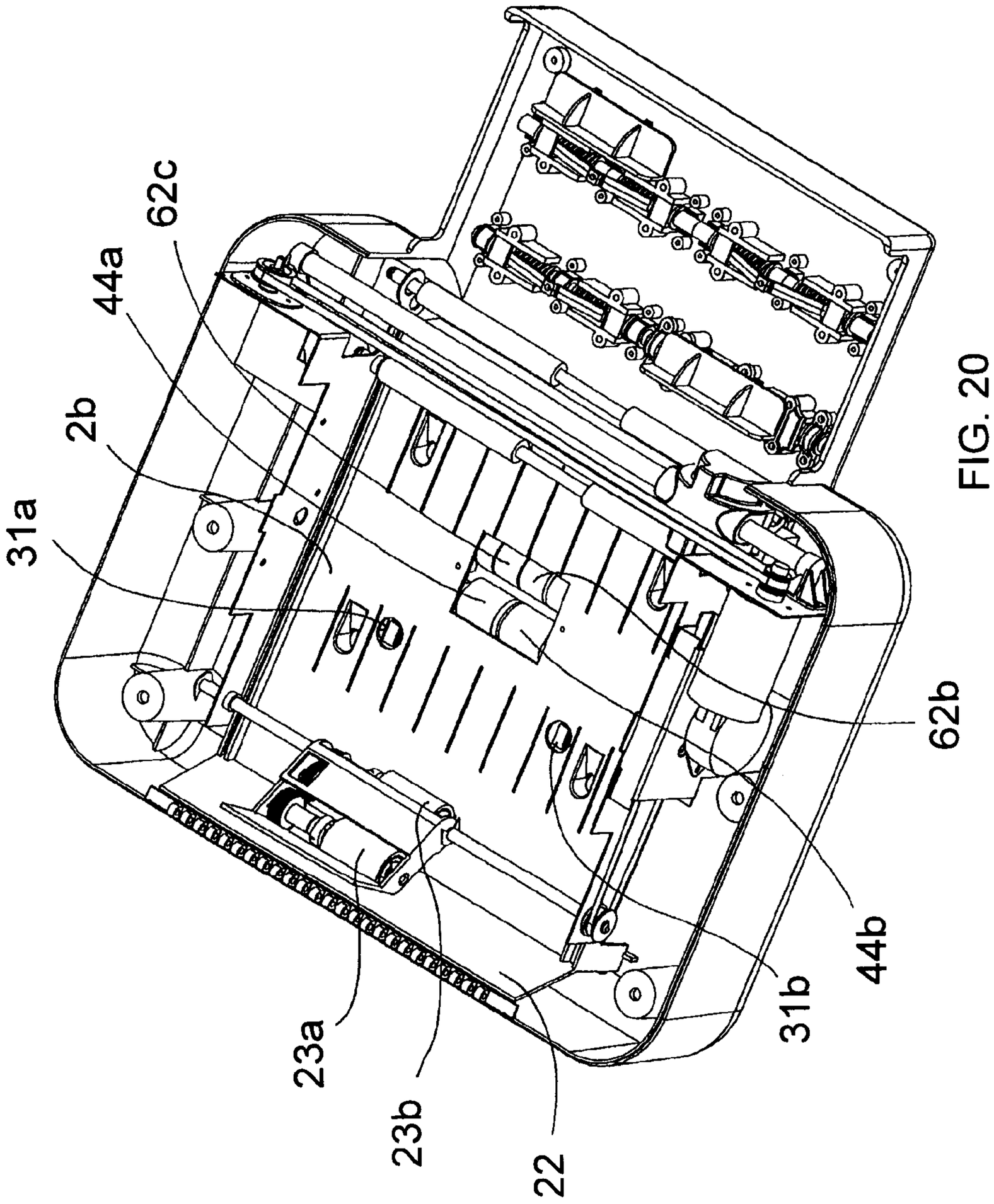

FIG. 20

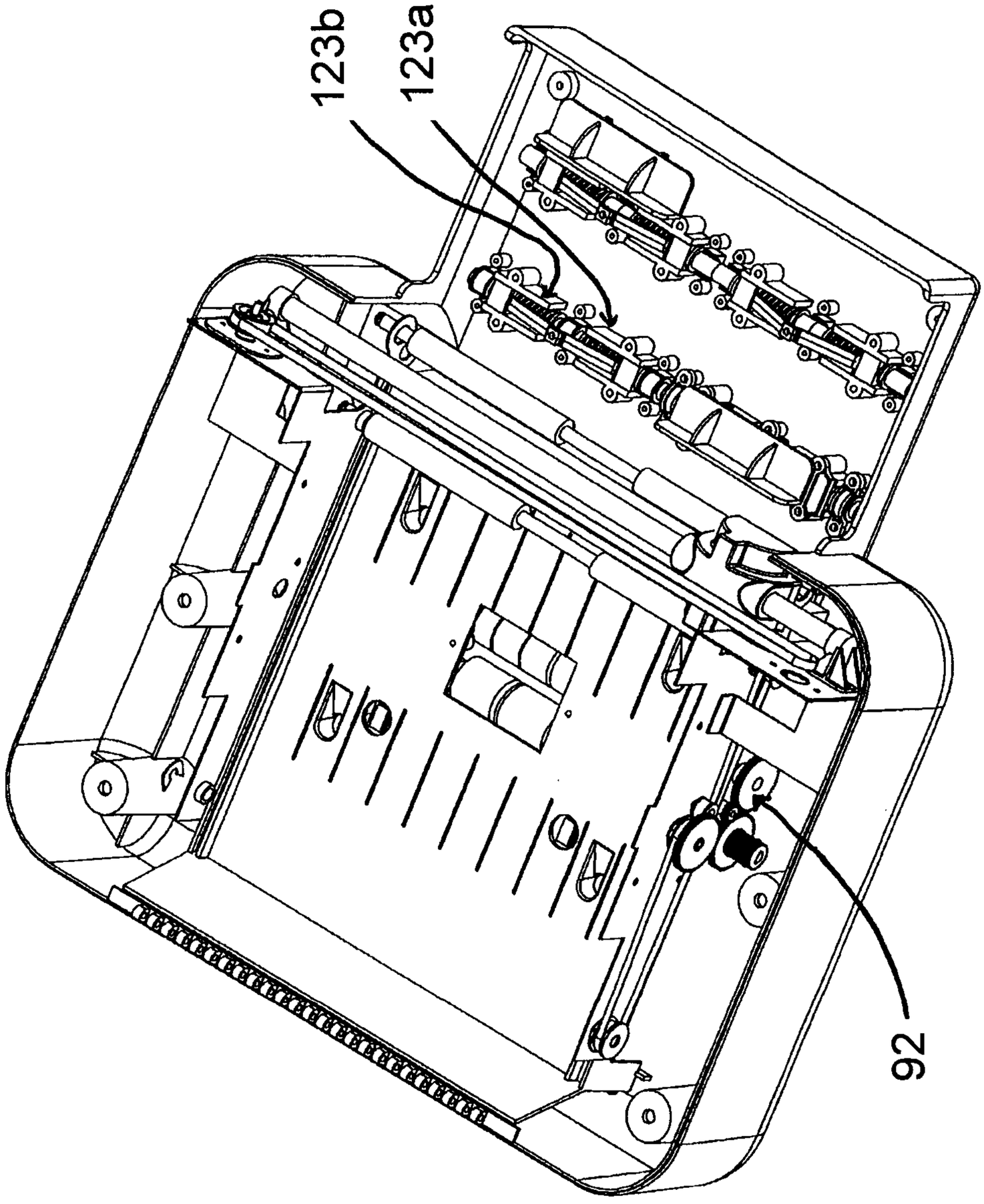

FIG. 21

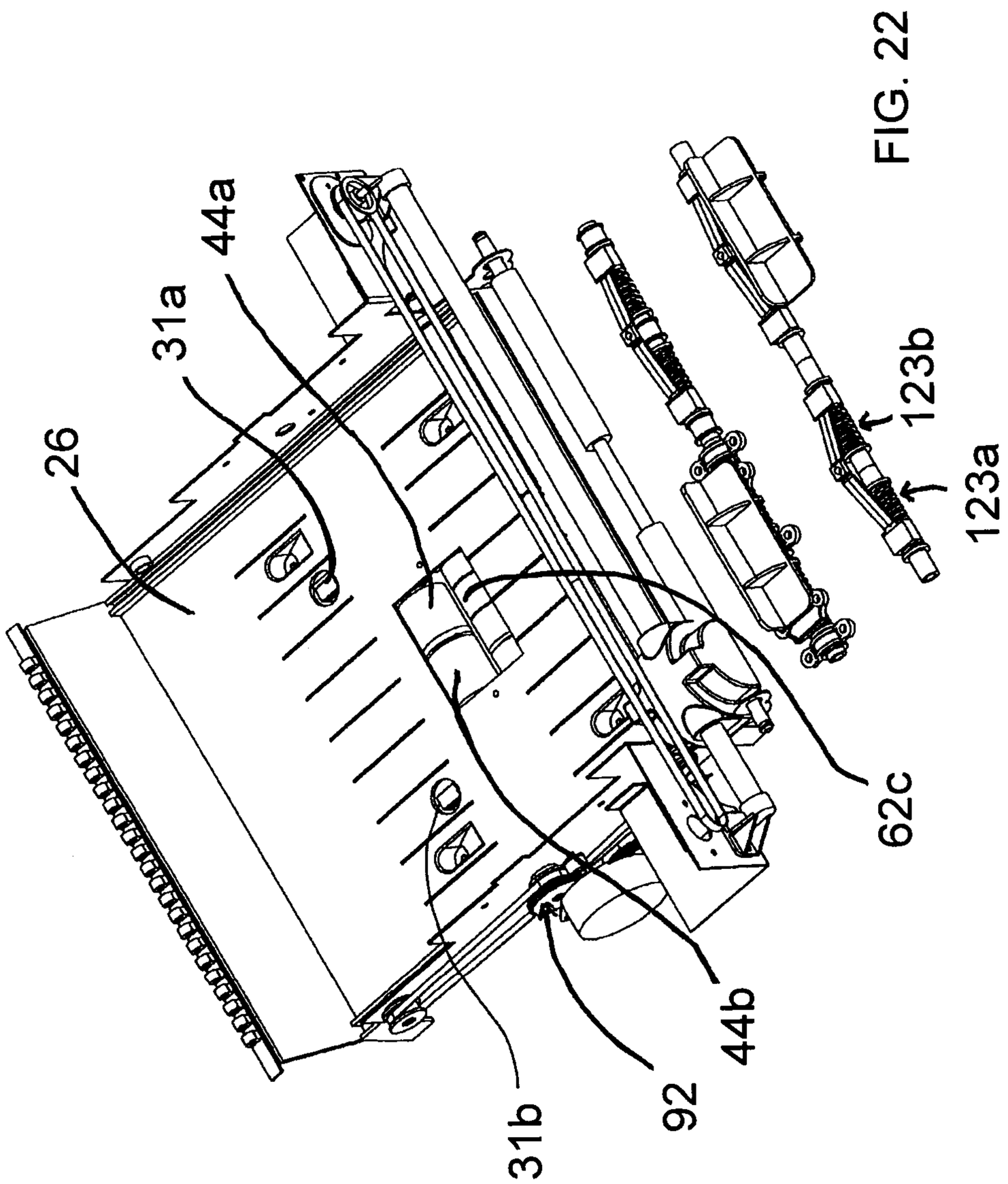

FIG. 22

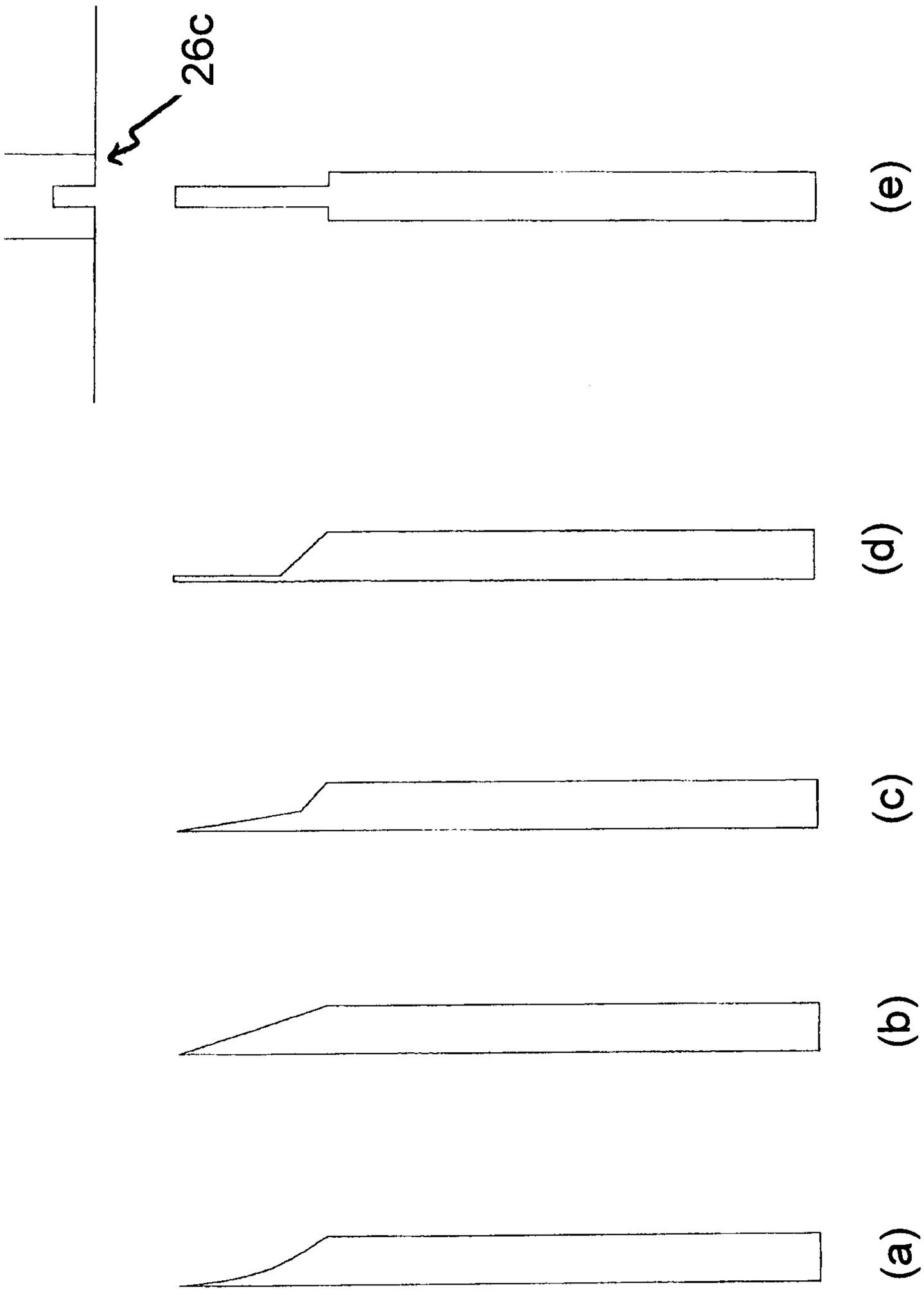

FIG. 23

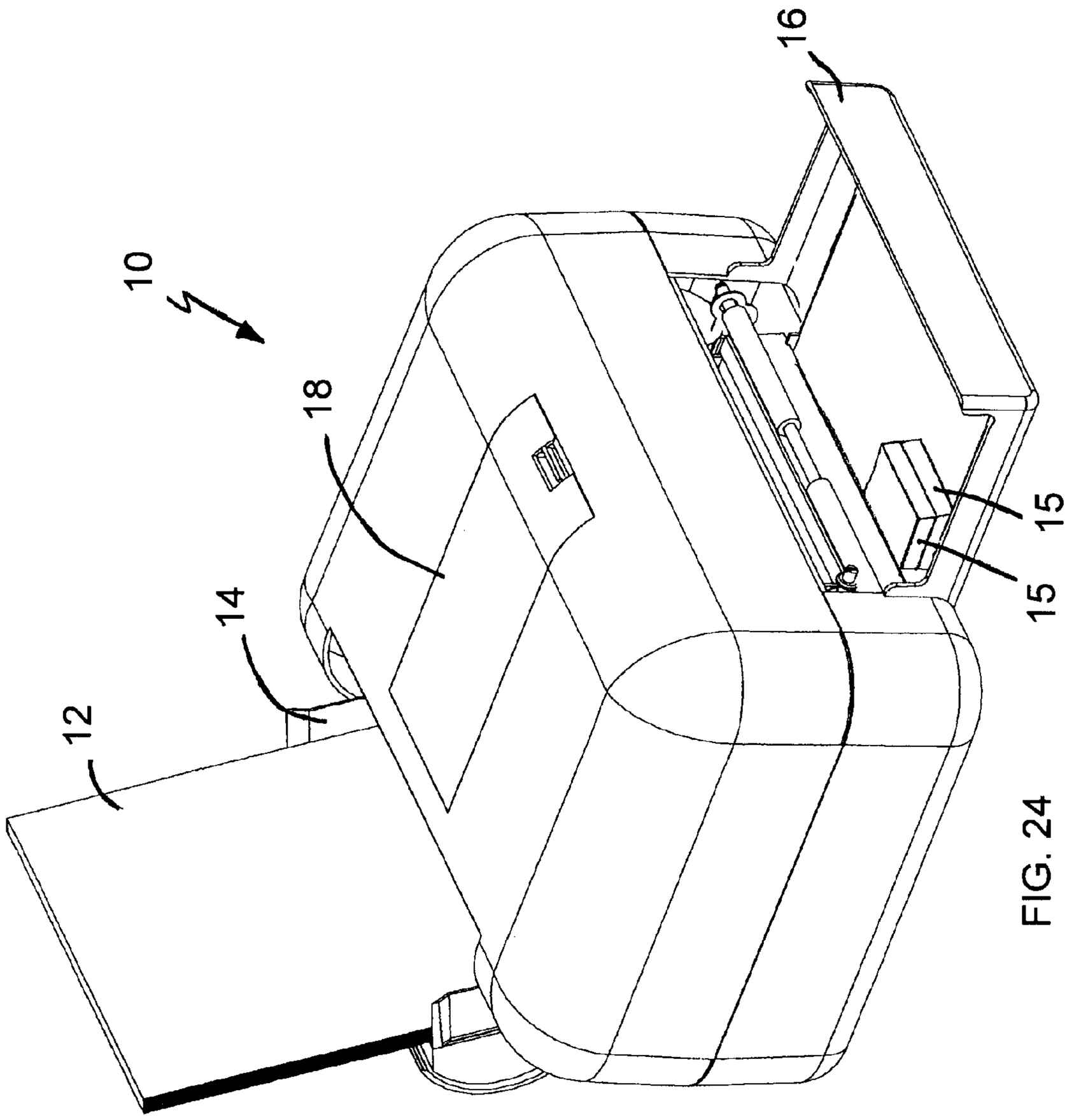

FIG. 24

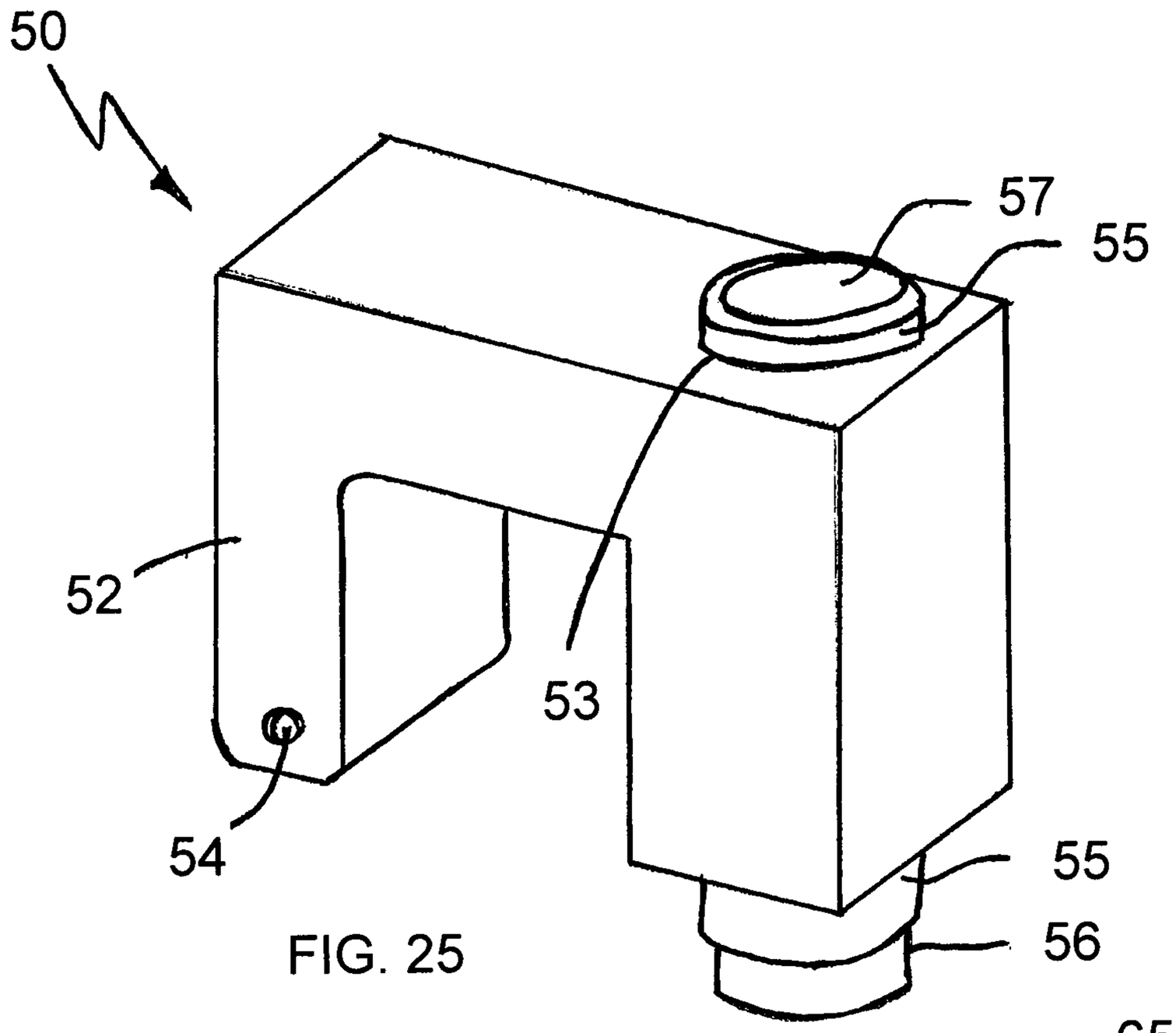

FIG. 25

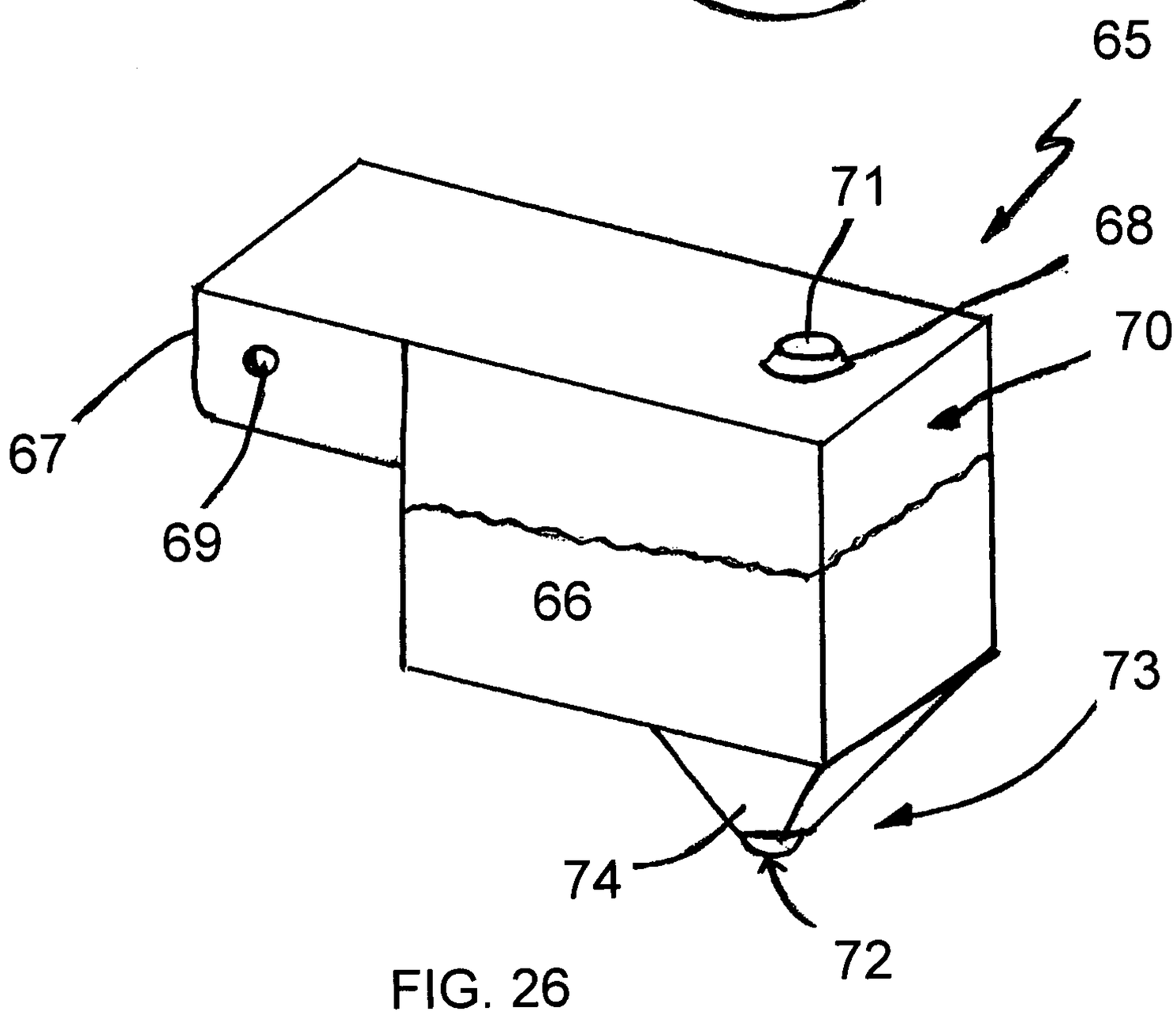

FIG. 26

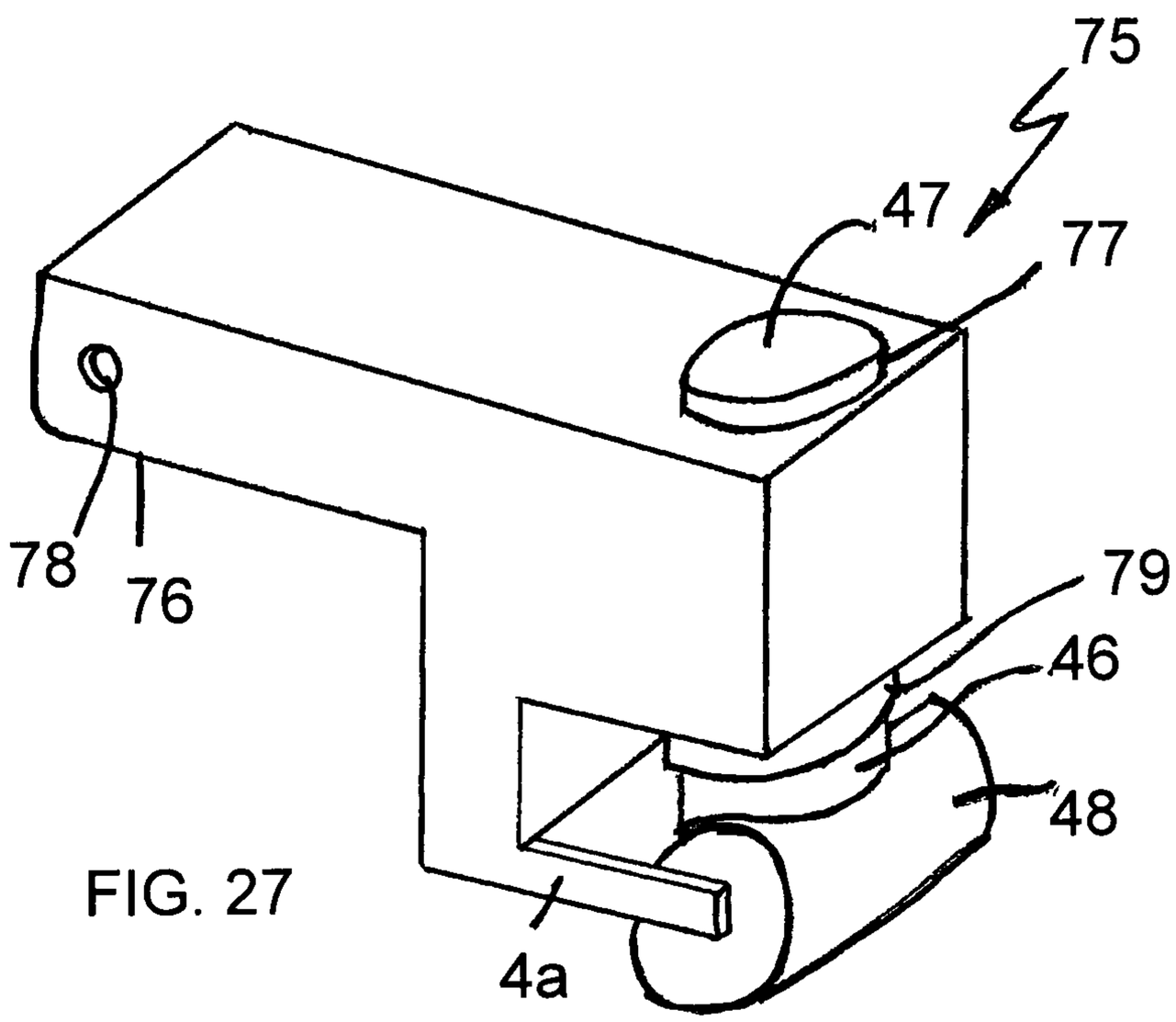

FIG. 27

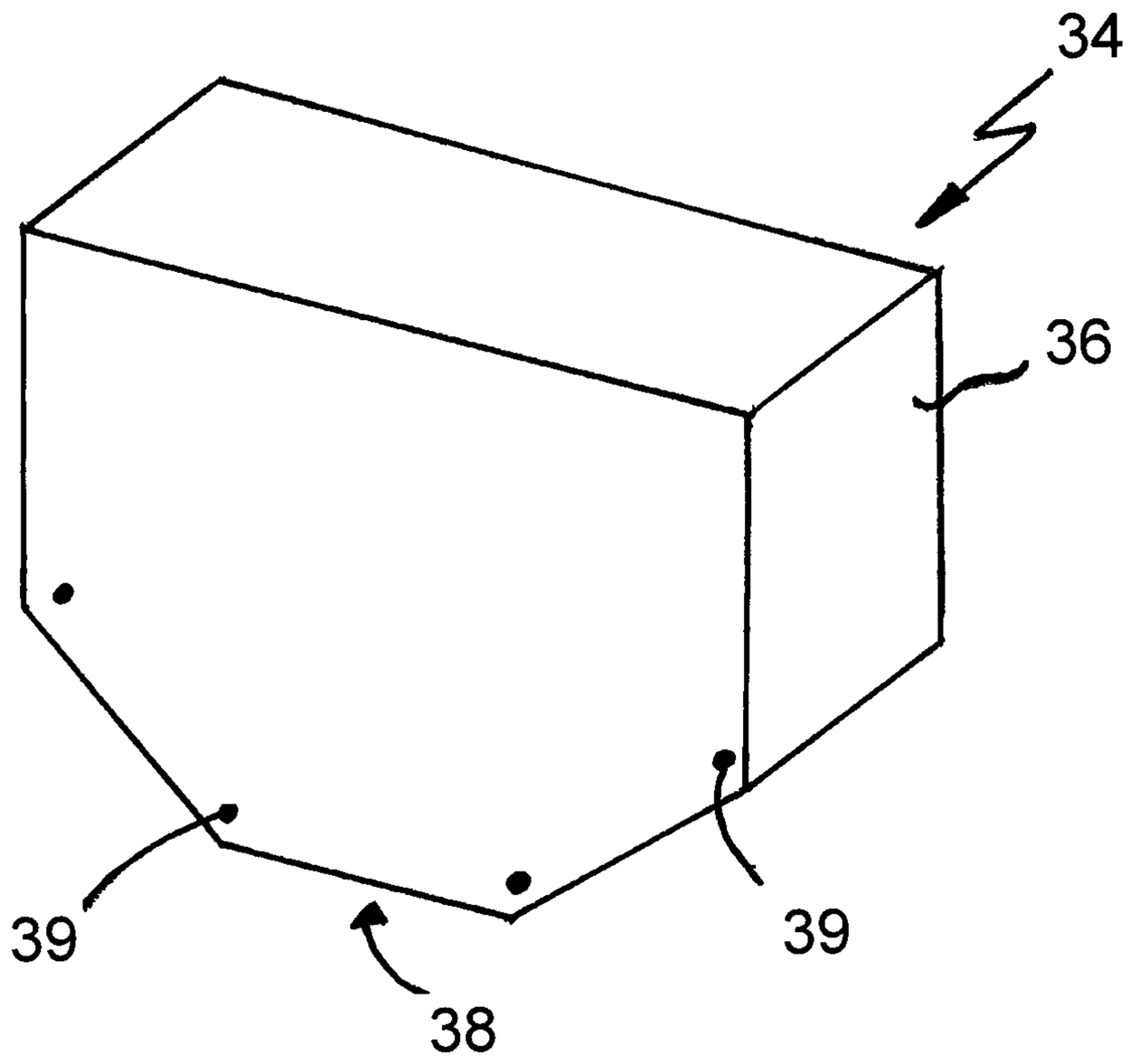

FIG. 28

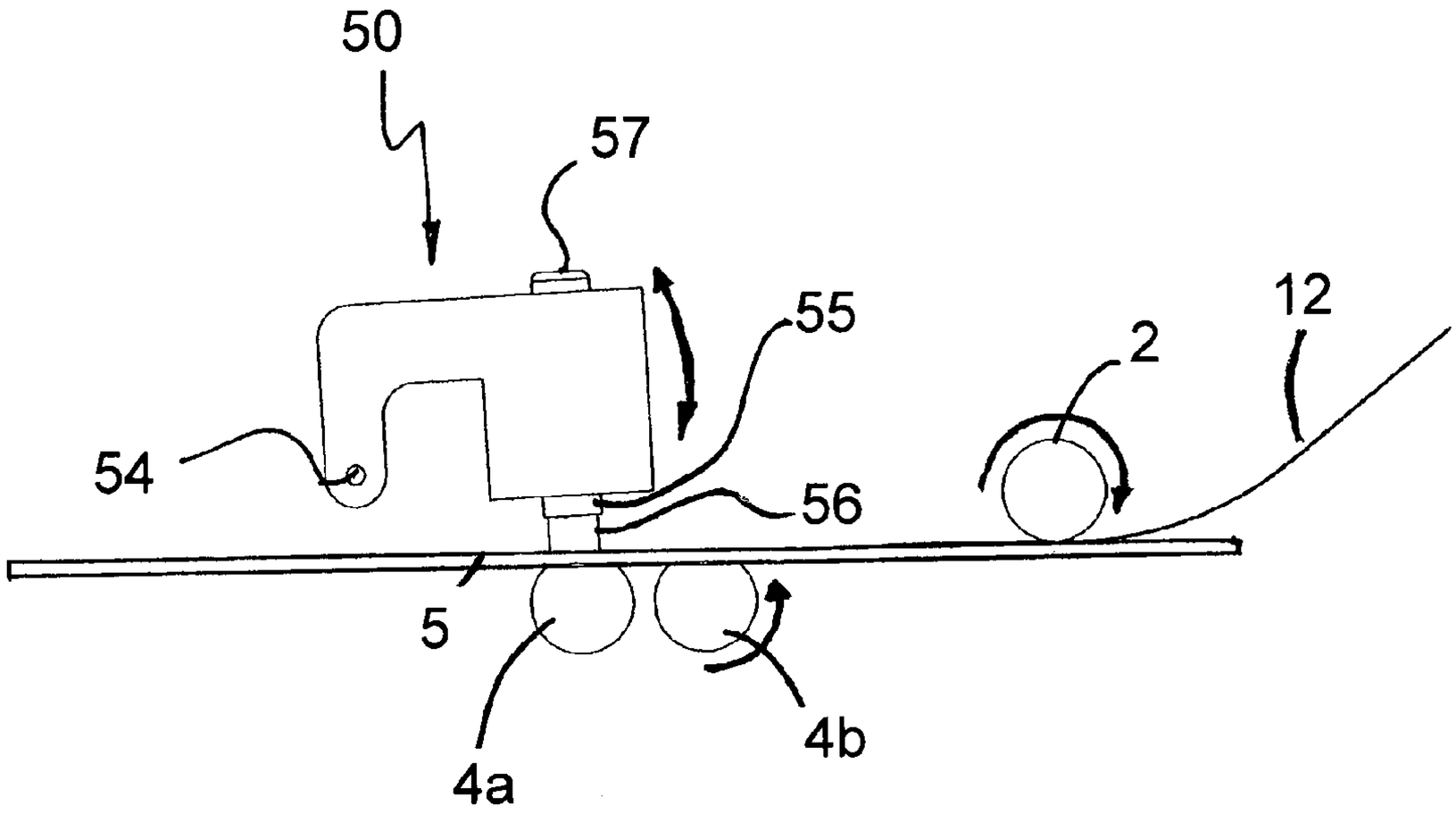

FIG. 29A

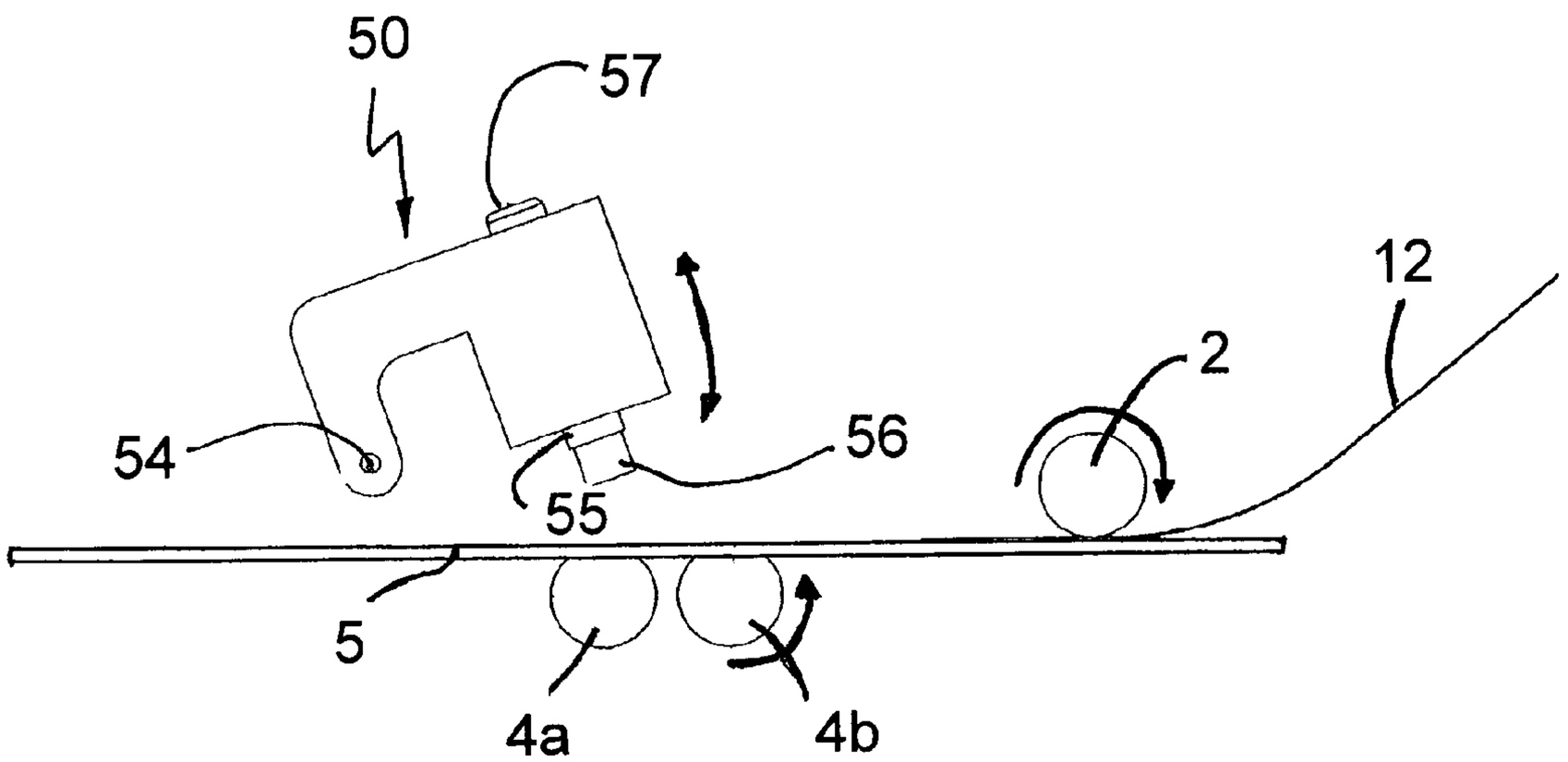

FIG. 29B

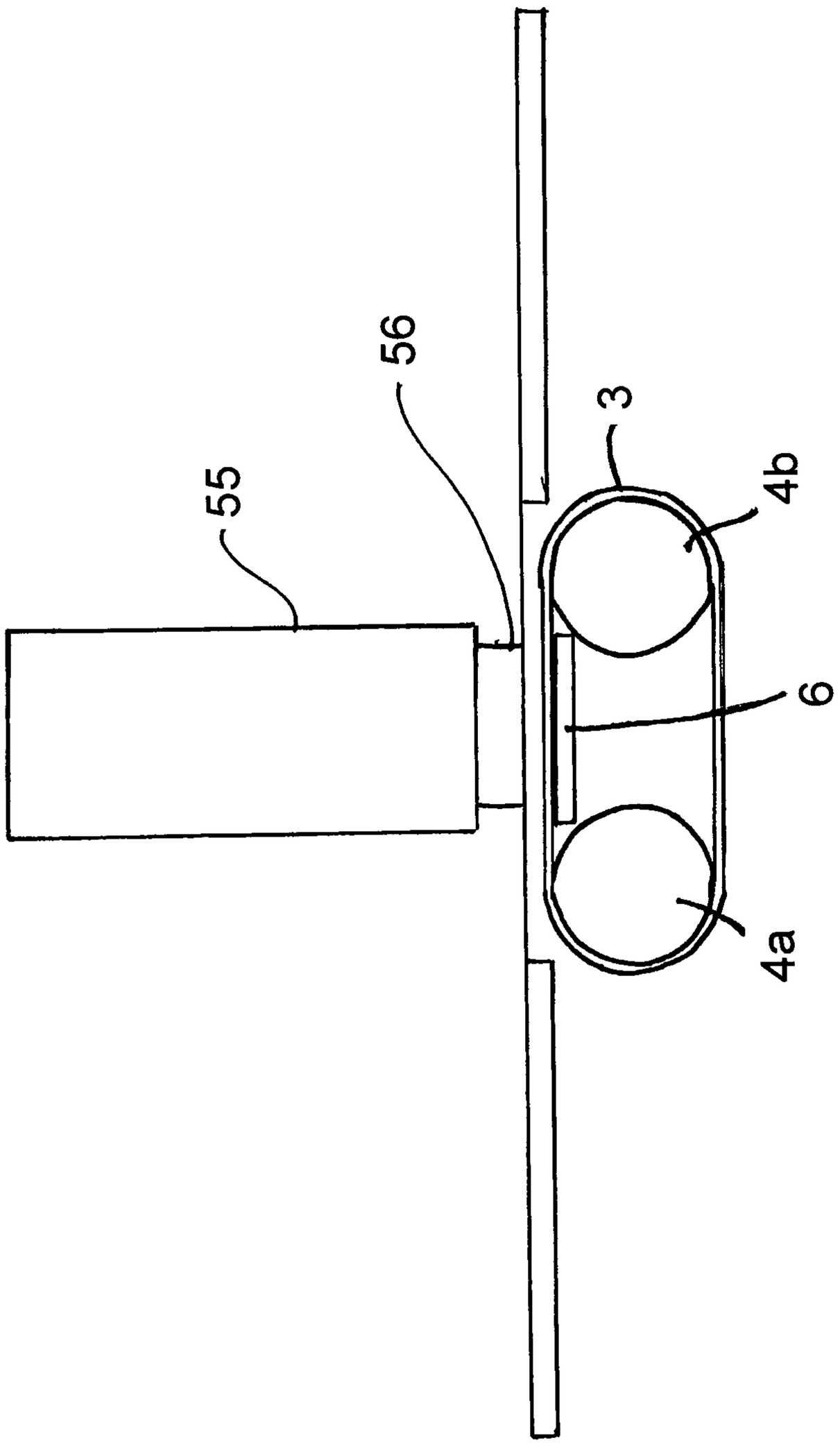

FIG. 30

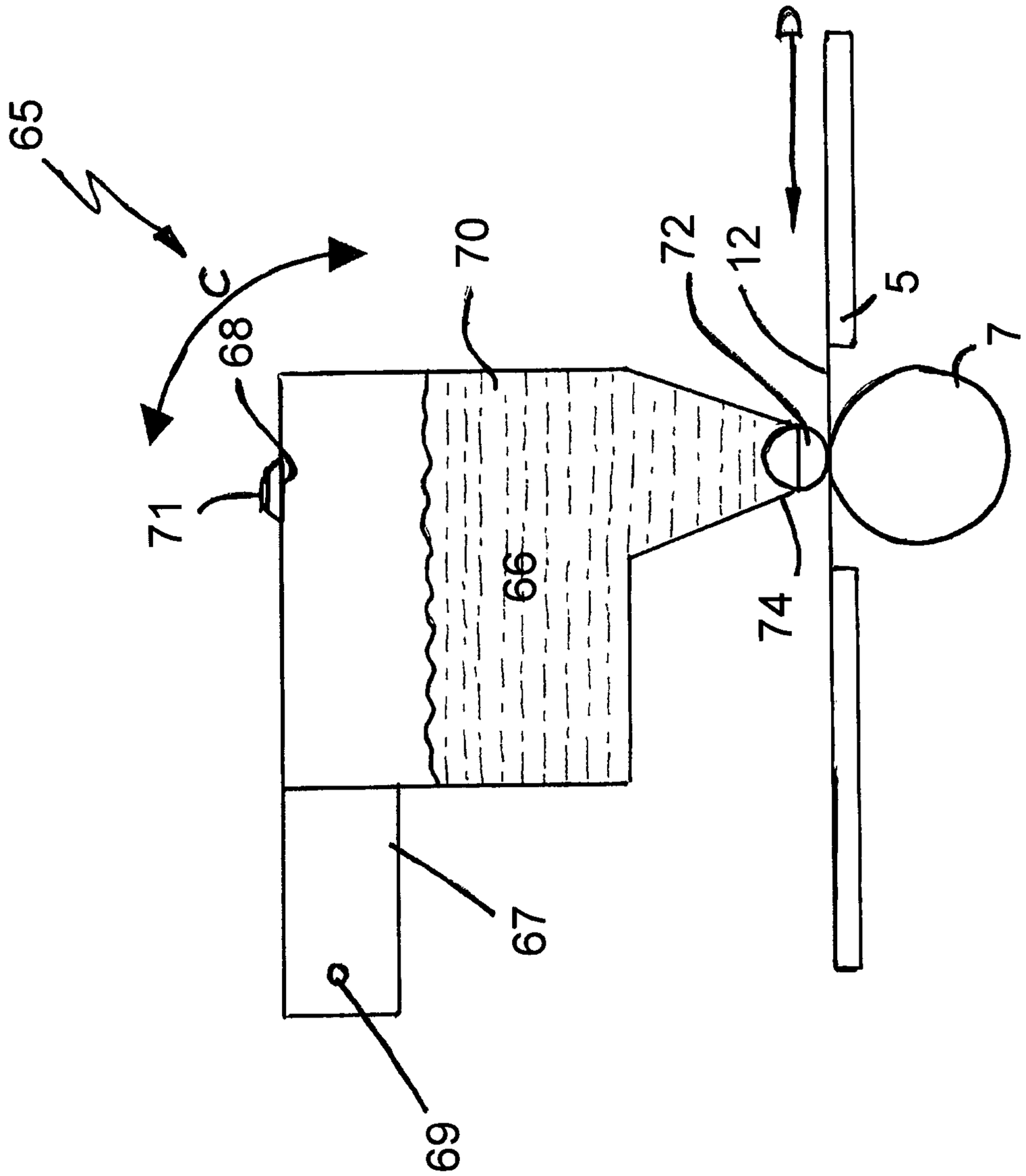

FIG. 31

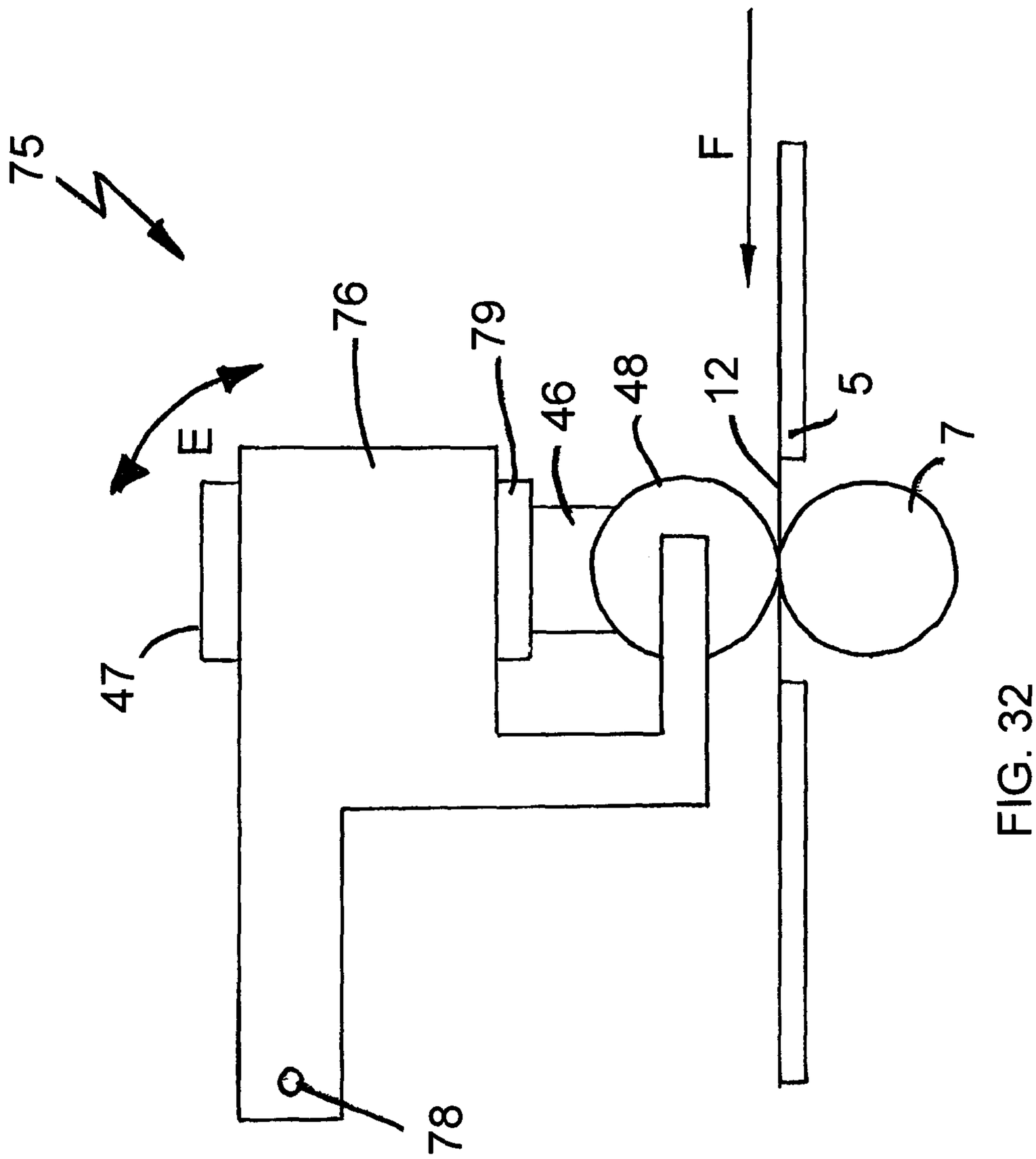

FIG. 32

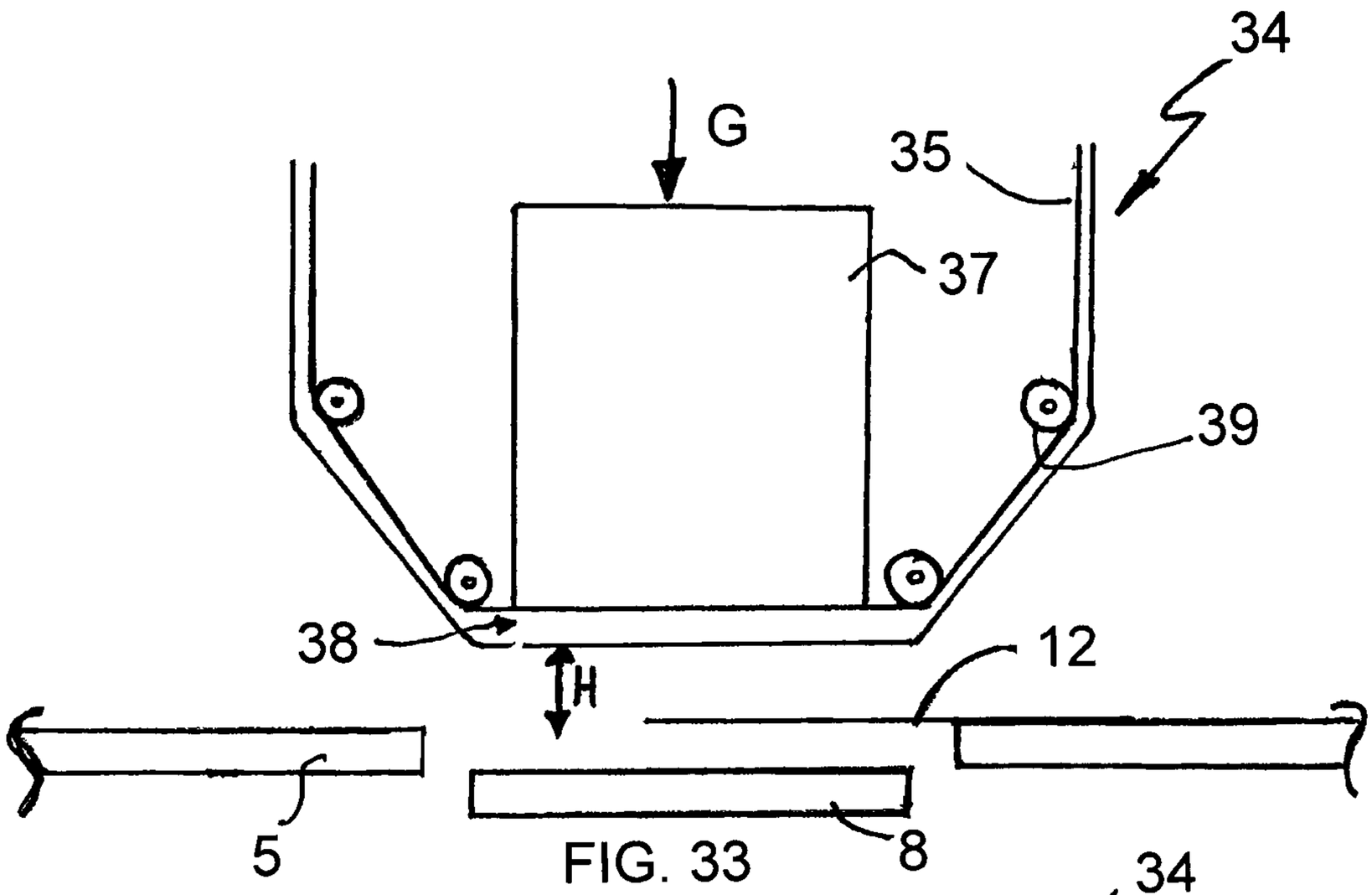

FIG. 33

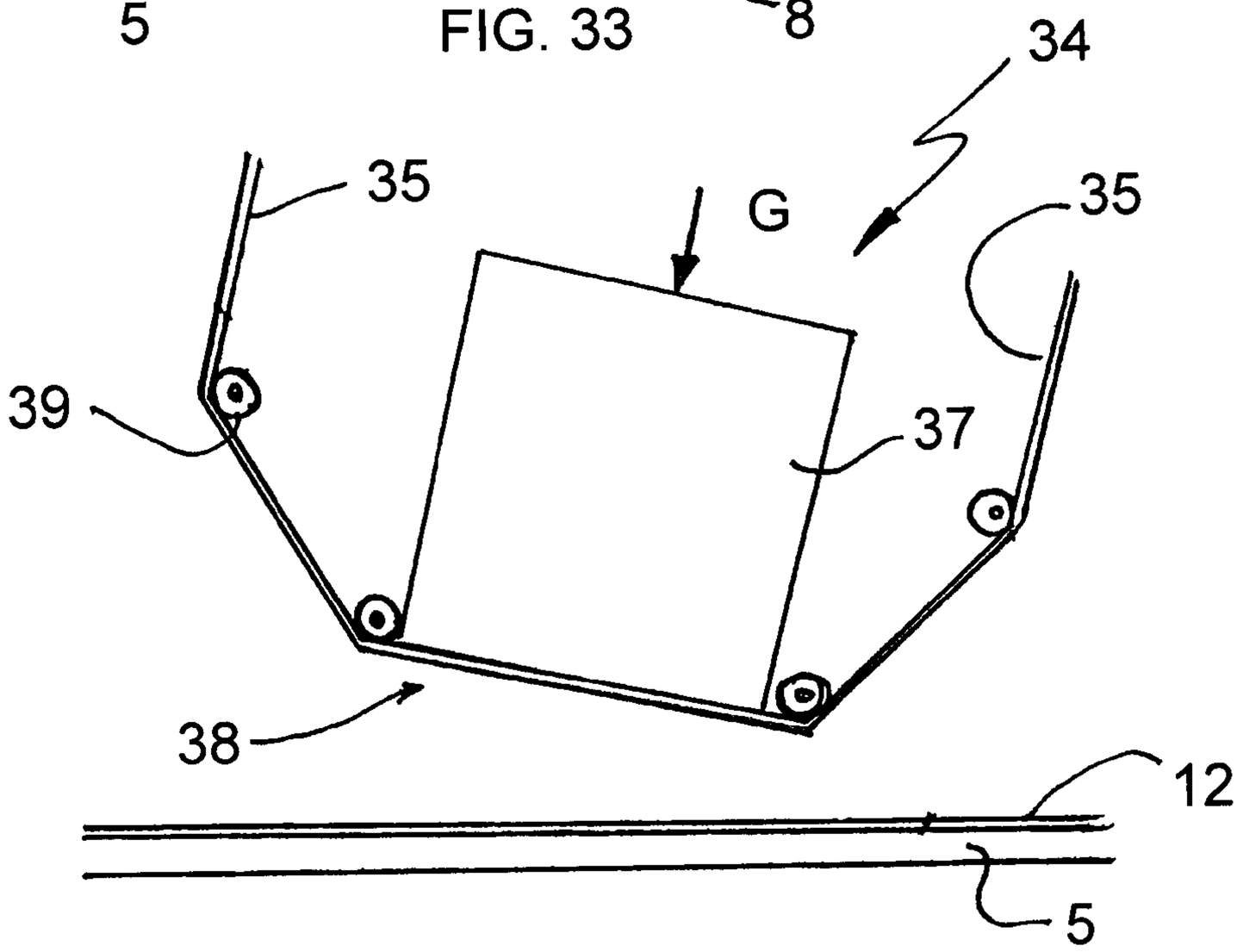

FIG. 34

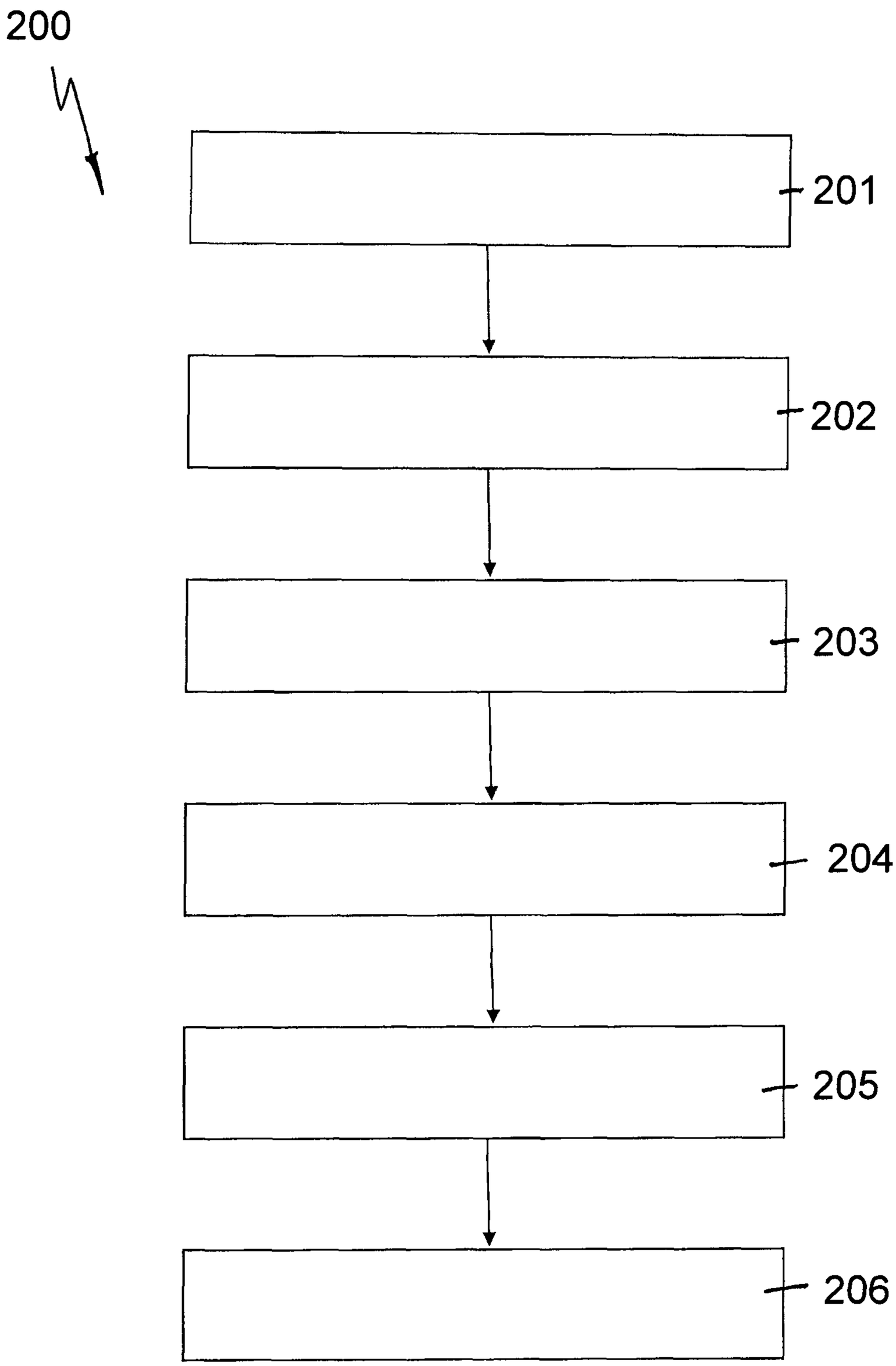

FIG. 35

NOTEPAD FORMING METHOD AND APPARATUS THEREFOR

CROSS-REFERENCE TO RELATED APPLICATIONS

This application claims priority to international patent application no. PCT/AU2009/000046 filed on Jan. 16, 2009 and to Australian patent application nos. AU 2008900220 filed on Jan. 17, 2008 and AU 2008903669 filed on Jul. 17, 2008. The disclosures of these applications are incorporated herein by reference in their entireties.

FIELD OF INVENTION

The present invention relates to a notepad forming apparatus and method, more particularly, the present invention relates to a method and apparatus for forming a notepad that receives and processes individual sheets of fibrous material in a desktop environment.

BACKGROUND OF THE INVENTION

Notepads generally comprise multiple sheets of fibrous material, such as paper, formed together into a pad by attaching the sheets together along a common edge. Each of the individual sheets are then able to be used by a user for a variety of purposes and can be readily detached or separated from the pad of sheets where required. The size of the notepad and the sheets contained therein may vary depending upon the specific use of the notepad.

In the formation and manufacture of documents, such as notepads, individual, sheets or pages of the document are typically processed by a production line or facility. The sheets are typically initially fed into the production line where they are transported to a collation device that firstly collates the sheets into an ordered stack. The ordered stack of sheets are then transported to a cropping or cutting station that typically crops or cuts the sheets into the desired size. The cropped sheets are then delivered to a binding station where they are bound together along a common edge to form a volume of sheets. Depending upon the nature of the document or notepad, the volume of sheets may be further processed, such as by covering or the like, for distribution and sale. It will be appreciated that the cutting steps and the binding steps may be performed in any order.

Traditional document binding processes vary depending upon the final desired form of the document. Mechanical binding means, typically involve the use of a mechanical means, such as a wire or plastic coil, which is threaded through a plurality of perforations formed along a common edge of the sheets of the document. The coil acts to retain the individual sheets together in an ordered manner. In other forms, chemical binding means, such as adhesives, may be employed to bind the pages of a document together. Following collation of individual pages into a stack and cropping the stack, an applicator is typically employed to apply a layer of binding adhesive along an edge of the stack of pages. A press may also be employed by the production line to apply a pressing force to the edge of the stack of sheets to facilitate a bond between the adjacent sheets.

It will be appreciated that such traditional processes of forming a document, such as a notepad, require a dedicated manufacturing facility comprising a number of distinct stations provided along the production line for performing separate tasks associated with processing individual sheets and binding them into a finished document. Such assembly lines

do not easily and economically provide for manufacturing documents in small runs or batches, and do not readily provide for simple customization of the manufactured document to variable sizes and the like.

One particular type of notepad that is in common use is the Post-It™ note pads that are marketed under the trademark "Post-it" by Minnesota Mining and Manufacturing Company, St. Paul, Minn. These notepads typically comprise varying sized stacks or sheets of paper joined along a common edge by adhesive. The notepad comprises a stack of sheets of paper, each haying a narrow strip or band of generally low-tack, pressure-sensitive adhesive aligned along an edge on its rear side by which the sheets can, be temporarily adhered together. The sheets can be separated from the stack by breaking the low-tack adhesive bond between that sheet and an adjacent sheet in the stack such that the separated sheet can be further adhered to substrates such as documents, computer screens or other articles, generally for leaving a message or reminder. The strip of adhesive allows the sheets to be adhered together in the stack, and when a sheet is removed from the stack, the adhesive remains in position to enable the sheet to be further adhered to another surface. Such notepads are typically made from clean sheets of paper to enable a user to write on or otherwise use the sheet, whereby it can be repositioned. It will be appreciated that the manufacture of such sheets also comprises a dedicated assembly line to process the sheets and bond the individual sheets together.

Thus, there is a need to provide a method and device for forming a notepad in a home, work or office environment that can be performed simply and economically by a dedicated unit that provides customization by the user specific to their own needs.

Further, it is well established that offices and homes throughout the world generate masses of paper where the sheets are printed on only one side. Best office practice may include re-using the clean or reverse side of the sheet as rough note paper or, where a printer or photocopier can reuse second hand paper by printing on the reverse side without jamming, re-using the paper in such machines. One-sided paper may otherwise be shredded for pulping and recycling as cardboard, newspaper, toilet paper, recycled office paper or paper toweling. However, such recycling, although useful to preserve wood resources and preferred to delivering one-sided paper to landfill, may be energy intensive and environmentally undesirable.

Thus, there is also a need to provide a method and device for forming a notepad in a home, work or office environment that can process one-sided paper generated in the home, work or office environment to form notepads that can utilise the clean or reverse side of the sheet for further use.

The above references to and descriptions of prior proposals or products are not intended to be, and are not to be construed as, statements or admissions of common general knowledge in the art. In particular, the following prior art discussion does not relate to what is commonly or well known by the person skilled in the art, but assists in the understanding of the inventive step of the present invention of which the identification of pertinent prior art proposals is but one part.

STATEMENT OF INVENTION

Accordingly, in one aspect of the invention there is provided a method of manufacturing a notepad comprising a stack of sheets, a first side of each sheet having an adhesive to attach said first side to the reverse face of the sheet immediately facing it in said stack, said method including the steps of:

loading loose sheets or similar dimensions into a sheet feeder with the reverse face of each sheet in said stack facing in the same direction;

feeding each sheet into a device;

cutting each sheet or a number of said sheets to form cut sheets of predetermined dimensions;

applying said adhesive to a portion or portions of said first side of each sheet;

stacking said cut sheets; and

forming said cut sheets together to form said notepad.

The step of forming the sheets together may comprise a step of pressing the sheets together where the sheets are adhered together by way of a pressure sensitive, repositionable adhesive.

In another aspect, the invention provides a notepad made from a stack of sheets, a first side of each sheet having an adhesive to attach said first side to the reverse face of the sheet immediately facing it in said stack, said sheets being loose sheets of similar dimensions, each sheet cut to predetermined dimensions, said adhesive applied to a portion or portions of said first side of each sheet and said cut sheets pressed together to form said notepad.

In still another aspect, the invention provides a device for manufacturing a notepad comprising a stack of said sheets, a first side of each sheet having an adhesive to attach said first side to the reverse face of the sheet immediately facing it in said stack, said device including:

a sheet feeder for loading a stack of loose sheets of similar dimensions with the reverse face of each sheet in said stack facing in the same direction and feeding each said sheet downstream of said device;

cutting means to cut each sheet or a number of said sheets to predetermined dimensions;

adhesive applicator to apply said adhesive to a portion or portions of said first side of each sheet;

stacking means to stack said cut sheets one on top of the other; and

forming means to press said cut sheets together to form said notepad.

In yet another aspect, the invention provides a method of manufacturing a notepad from office paper, said notepad comprising a stack of said sheets, a first side of each sheet having an adhesive to attach said first side to the reverse race of the sheet immediately facing it in said stack, said method including the steps of:

loading loose office paper of similar dimensions into a paper feeder;

feeding each sheet of office paper into a device;

cutting each sheet or a number of said sheets of said office paper into cut sheets of predetermined dimensions;

applying said adhesive to a portion or portions of said first side of each cut sheet;

stacking said cut sheets; and

pressing said cut sheets together to form said notepad.

The sheets may be made from any suitable material to which indicia may be applied, for example by printing or inscribing thereon. The sheets may be made from suitable polymeric material, from cellulosic material such as paper, or a combination or blend thereof. The sheets may be paper sheets the sheets may be used or unused, recycled or virgin. The sheets may be pre-used sheets on which one side has had indicia printed thereon. The sheets may be re-used office paper. The loose sheets are preferably of uniform dimensions. However, the device may be adjustable to accommodate loose stacks of sheets of different dimensions.

The notepad may comprise a plurality of sheets of fibrous material grouped together. The purpose of the notepad may be for writing on, or may include pre-printed material such as photographs or information, that can be used for a variety of purpose such as advertising or decoration. In one form, the notepad preferably comprises a stack of sheets derived from office paper whereby the plan dimensions of the notepad are smaller than the plan dimensions of an office sheet or paper. Typically, the different dimensions of an office sheet of paper will correspond to that of A4, letter, legal, executive and other standard office paper sizes.

The notepad formed by the present invention may assume a variety of different sizes in one form the notepad may have a size equivalent to standard A3, foolscap, A4, letter, legal, executive and other standard office paper sizes. In another form the notepad may have dimensions of between 20 100 mm*20 100 mm and may be rectangular or square in con figuration. In a preferred form the notepad may have a substantially square configuration of 75 mm*75 turn another form the notepad may have a substantially rectangular dimension of 40 mm*50 mm. It will be appreciated that the dimensions of the notepad may vary depending upon the needs of the user of the present invention.

In determining which face of a sheet will be the first side and which will be the reverse face, this may be decided by an operator. Where the sheets are pre-printed with specifically intended printed material, then the non-printed side may be the first side to which adhesive is to be applied. If the sheet is pre-used with unwanted inscriptions or printed matter, this side may be the first side and the other (presumably clean) face will be the reverse face. Where the sheet is virgin and both faces are clean, the operator may determine which side, if any, is preferred as the first (adhesive receiving) side. Typically, the first side will face downwards and the reverse face will face upwards; although alternative arrangements are fully within the scope of the invention.

The adhesive may be a re-positional adhesive. The repositional adhesive may be a low tack or pressure-sensitive adhesive such as that used in the 3M Post-It™ notepad product referred to above. However, other low-tack adhesives are contemplated as being within the scope of the present invention.

Alternatively, the adhesive may be a high strength, permanent glue and the portion bearing the adhesive may be separated from the rest of the cut sheet by a weakened line, for example, a perforated line. The printable, printed, inscribed or inscribable section of the cut sheet may therefore be removed by tearing along the weakened line for use as a non-adhesive bearing sheet.

The device of the present invention may be a stand alone device or may be incorporated in any one of a range of office equipment, such as a printer, photocopier, scanner, fax machine, multifunction device or the like.

The sheets are preferably shifted from one zone to another within the device by means of a combination of driven and free wheeling rollers. The driven rollers may be rubber-surfaced to provide suitable grip to the sheet surface. The rollers may be driven by one or more stepper motors. Each driven roller may be separately driven by a separate stepper motor. The positioning and movement of the sheets may be detected and controlled by photosensitive means feeding back sheet position data to the drive motors, all of which is preferably controlled by a central processing unit (CPU). The photosensitive means may be in the form of photodiodes. The photosensitive means may be in the form of one or more linear photodiode arrays. For example, if the fed sheet is skewed, the photosensitive means may detect the mal-aligned sheet and feedback the CPU. The CPU may then command roller drive

motor to adjust its rate by speeding up or slowing down to effect a correction in the alignment of the sheet.

The cutting means that may be a static knife or blade suitably positioned to cut the sheet as it proceeds through a cutting zone. The cutting means may be in the form of a guillotine that periodically drops to effect a cut in the sheet at predetermined intervals. The cutting means may include any other suitable cutting device, and includes non-physical devices such as laser or hot melt devices which may be suitable for polymeric sheet material. Of course, the various operations in the series of processes performed by the notepad forming device can be interchanged and varied in order or performed simultaneously, depending on their nature. For example, the transverse cutting process may be performed before or alter the longitudinal cutting operation, or at the same time (for example by a punch or stamp knife with longitudinal and transverse blades). Irregular cuts using stamp knifes or arrays of knives may thus be performed to produce novelty shape pads, such as geometric, animal, building or vehicle shapes. For office applications, the typical shaped pad produced will be rectangular, including square.

The adhesive applicator includes any suitable means for applying a layer, strip or band of adhesive material to a portion or portions of the sheet surface. Where the adhesive is applied in portions, the portions May be randomly or regularly spaced. The adhesive applicator may include a reciprocating stamp means, a roller with an adhesive application zone on its surface, optionally protruding therefrom or may involve the use of adhesive transfer tape applied by driven or free-wheeling rollers. The adhesive applicator may include an adhesive storage vessel with one or more applicators. The applicator(s) may be, for example, located on a drum or may be mounted on a reciprocating frame. The applicator(s) may inter alia include brush material, tabs, glue absorbent stubs or non-absorbent stubs.

The cutting means may include a support guide and rollers to stiffen the sheet preparatory to cutting.

The stacking means may include any suitable device adapted to collect cut sheets of similar dimensions and to order their stacking, one on top of the other. The stacking means preferably ensures that the respective adhesive-beating surfaces of the cut sheets are facing in the same direction and that the edges of the sheets in the stack are aligned in registration with one another.

The pressing means may include a plunger. The plunger may move relative to the stacking means. That is, in one embodiment, the plunger may be stationary and the stacking means may be movable relative thereto. The plunger may push up or press down on the stacked cut sheets against an upper or lower panel in the stacking means whereby to enable the cut sheets to be pressed together to form the notepad.

In still yet another aspect, the present invention provides an adhesive applicator cartridge for a sheet processing device including:

a body mountable to the sheet processing device so as to be positioned adjacent a sheet being processed by said sheet processing device, said body having:

an adhesive receptacle for receiving a supply of adhesive; and

an adhesive applicator for applying said adhesive to a surface of the sheet being processed by said device.

In one embodiment of this aspect of the invention, the body is mountable within a recess provided in the sheet processing device, in one farm, the sheet processing device may be a sheet binding device for binding together sheets into a bound volume. In another form, the sheet binding device may be a notepad forming device as described in relation to any of the above described aspects of the invention.

In a first embodiment, the adhesive receptacle is a bore formed in the body. A tubular cylinder may be provided within the bore to receive the adhesive therein. The adhesive may be in the form of an adhesive stick having a shape that conforms to the cylinder such that the adhesive stick is inserted into the cylinder and retained therein. A cap may be provided on an end of the cylinder to seal an end of the adhesive stick.

The adhesive applicator may be an open end of the cylinder through which an exposed end of the stick of adhesive projects. The exposed end of the stick of adhesive may be directed to contact the surface of the sheet being processed by the device to apply adhesive thereto as the sheet is being transported by the device. The body may be pivotally mounted to the sheet processing device and be movable between an idle position, wherein the exposed end of the stick of adhesive is positioned remote from the sheet being transported by the device, and an application position wherein the exposed end of the stick of adhesive is positioned in contact with the sheet being transported by the device.

The body may include a control mechanism to control longitudinal movement of the stick of adhesive within the cylinder. The control mechanism may be configured to advance the stick of adhesive as it is consumed during use, to ensure that the end of the stick of adhesive projects from the open end of the cylinder.

In a second embodiment, the adhesive receptacle may be a storage reservoir for receiving a volume of liquid adhesive. The storage reservoir may be provided within the body and have an inlet to facilitate filling of the storage reservoir with liquid adhesive. The inlet may be sealed by a removable cap,

The adhesive applicator may be mounted at a lower end of the body so as to be in fluid communication with the liquid adhesive contained within reservoir. The adhesive applicator may include a ball or roller member secured within an outlet of the storage reservoir. The ball or roller member may project at least partially from the outlet to contact the sheet being processed by the device to apply adhesive thereto as the sheet is being transported by the device. The body may be pivotally mounted to the sheet processing device and be movable between an idle position, wherein the ball or roller member is positioned remote from the sheet being transported by the device, and an application position wherein the ball or roller member is positioned in contact with the sheet being transported by the device.

In a third embodiment of the present invention, the adhesive receptacle is a bore formed in the body. A tubular cylinder may be provided within the bore to receive the adhesive therein. The adhesive may be in the form of an adhesive stick having a shape that conforms to the cylinder such that the adhesive stick is inserted into the cylinder and retained therein. The tubular cylinder may be configured such that the adhesive stick projects from an open end thereof to be in contact with the adhesive applicator. A cap may be provided on the other end of the cylinder to seal an end of the adhesive stick.

The adhesive applicator may be a roller mounted adjacent the open end of the cylinder. The roller may be substantially cylindrical and may be free to rotate about its central axis. The roller is mounted between a pair of arms extending from the body such that it extends substantially across the open end of the cylinder to be in contact with the stick of adhesive. A control mechanism may be provided to control advancement of the stick of adhesive within the cylinder.

In a fourth embodiment of the present invention, the body is the adhesive receptacle and receives the adhesive in the limn of an adhesive tape. The body may have an open portion formed adjacent the sheet being processed by the device. The adhesive tape may be mounted within the body and wound around an internal perimeter of the body such that it extends across the open portion of the body.

In this embodiment, the adhesive applicator is a stamp member mounted within the body. The stamp member may be actuable to extend from the open portion of the body to contact a surface of the sheet being processed by the device as the sheet is being transported past the body. Upon actuation of the stamp member, the stamp member may contact the adhesive tape extending, across the open portion of the body, thereby causing the adhesive tape to contact the surface of the passing sheet to facilitate transfer of adhesive present on the tape to the surface of the sheet.

In each of the above embodiments, the adhesive may be a low-tack or pressure sensitive adhesive. In an alternative embodiment, the adhesive may high strength or permanent adhesive.

The sheets being processed by the sheet processing device may be sheets of paper or other print media. The sheets may be printed on one or both sides, or may be previously used sheets of paper. In another form, the sheets may be made from cardboard or from a polymeric material.

In each of the above embodiments, the body may be removable from the sheet processing device to facilitate replacement of the adhesive applicator cartridge, and/or replenishment of the supply of adhesive.

BRIEF DESCRIPTION OF THE DRAWINGS

Preferred features of the present invention will now be described with particular reference to the accompanying drawings. However, it is to be understood that the features illustrated in and described with reference to the drawings are not to be construed as limiting on the scope of the invention. In the drawings:

FIG. **1** is a schematic side view of the device according to a preferred embodiment of the invention;

FIG. **1***a* is a schematic side view of a notepad forming device according to another embodiment of the invention;

FIG. **1***b* is a schematic top plan view of the notepad forming device shown in FIG. **1***a;*

FIG. **1***c* is a schematic perspective view of the arrangement shown in FIG. **1***c;*

FIG. **1***d* is a schematic side view of a cutting and stacking means according to another embodiment of the invention;

FIG. **1***e* is a schematic side view of a notepad forming device including an adhesive tape applicator;

FIG. **1***f* is a schematic side view of a notepad forming device incorporating the cutting and stacking means shown in FIG. **1***d;*

FIG. **1***g* is a schematic side view of a notepad forming device according to another embodiment of the invention;

FIG. **1***h* is a schematic side view of a notepad limning device having a printer head;

FIG. **1***i* is a schematic side view of a notepad forming device including a sticker applicator;

FIG. **1***j* is a schematic side view of a notepad forming device including a laser printing device.

FIG. **2** is a schematic side view of a feeder mechanism according to the preferred embodiment;

FIG. **3** is a schematic top plan view of the feeder mechanism shown in FIG. **2**;

FIGS. **4** (*a*)-(*f*) are graphic representations of the pixel voltage verses pixel number of arrays A and B of photo sensing means of alignment means of the preferred embodiment shown in FIG. **1**;

FIG. **5** is schematic plan view of a culling mechanism of the preferred embodiment;

FIG. **6** is a schematic front elevation of the cutting means;

FIG. **6***a* is a schematic side view of a punch blade suitable for various embodiments of the present invention;

FIG. **6***b* is a schematic partial plan view a longitudinal cutting means suitable for incorporation in various embodiments of the invention;

FIG. **6***c* is a perspective view of a laser cutting means driven on a rail suitable for use in various embodiments of the present invention;

FIG. **6***d* is a schematic top plan view of the laser cutting means shown in FIG. **6***c;*

FIG. **6***e* is a schematic perspective view of a cutting means incorporating a laser cutting head and belt drives, but otherwise similar to the cutting means shown in FIG. **6***c;*

FIG. **6***f* is a schematic plan view of the cutting means shown in FIG. **6***d;*

FIG. **7** is a schematic side view of an adhesive applicator forming part of the preferred embodiment;

FIG. **8** is a schematic perspective view of the adhesive applicator;

FIG. **8***a* is a schematic side elevation of an adhesive applicator applicable to various embodiments of the invention;

FIG. **8***b* is a schematic side elevation of a modification of the adhesive applicator shown in FIG. **8***a;*

FIG. **8***c* is a schematic front elevation view of the adhesive applicator shown in FIG. **8***b;*

FIG. **8***d* is a schematic side view of an adhesive applicator suitable for incorporation in the various embodiments of the invention;

FIG. **8***e* is a schematic side view of an adhesive applicator similar to that shown in FIG. **2**, but modified to include a blade;

FIG. **8***f* is a schematic side view of an adhesive applicator quid cutting means suitable for various embodiments of the present invention;

FIG. **8***g* is a schematic side view of the adhesive applicator shown in FIG. **8***f* in a different position;

FIG. **9** is a schematic side view lateral cutting means according to the preferred embodiment;

FIG. **10** is a schematic side view of the lateral cutting means showing detail of a slitting blade;

FIG. **11** is a schematic side view of stacking means according to the preferred embodiment;

FIG. **12***a* is a schematic side view of the stacking means and a pressing means shown in open position;

FIG. **12***b* is a schematic side view of the pressing means in closed position;

FIG. **13***a* is a perspective view of a stacking means containing cut sheets;

FIG. **13***b* is a perspective view of an empty stacking means shown in FIG. **13***a;*

FIG. **13***c* is a schematic end view of a cutting and stacking means according to an embodiment of the invention;

FIG. **13***d* is a schematic end view of a cutting and stacking means suitable liar various embodiments of the present invention;

FIG. **14** is a graphic representation of motor current verses compression distance of the pressing means and motor thereof;

FIG. **15** is a perspective view of the device according to the preferred embodiment;

FIGS. **16** and **17** are perspective views of the device with the top covers removed;

FIGS. **18-21** are perspective views of the roller mechanisms and drive motors with upper components of the device removed;

FIG. **22** is a schematic exploded perspective view of the drive mechanisms of the device of the preferred embodiment;

FIGS. **23***a*-**23***e* are schematic side views of various punch blades suitable for use in various embodiments of the present invention;

FIG. **24** is perspective view of a notepad forming device suitable for use with an adhesive applicator cartridge in accordance with the present invention;

FIG. **25** is a perspective view of an adhesive applicator cartridge according to an embodiment of the present invention;

FIG. **26** is a perspective view or an adhesive applicator cartridge according to an alternative embodiment of the present invention;

FIG. **27** is a perspective view of an adhesive applicator cartridge according to yet another embodiment of the present invention;

FIG. **28** is a perspective view of an adhesive applicator cartridge according to still yet another alternative embodiment of the present invention;

FIG. **29**A is a side view of the adhesive applicator cartridge of FIG. **25** in an operating position during use;

FIG. **29**B is a side view of the adhesive applicator cartridge of FIG. **25** in an idle position during use;

FIG. **30** is an enlarged view of an alternative arrangement for the adhesive applicator cartridge of FIG. **25** to apply adhesive to a sheet;

FIG. **31** is a side view of the adhesive applicator cartridge of FIG. **26** in an operating position during use;

FIG. **32** is a side view of the adhesive applicator cartridge of FIG. **27** in an operating position during use;

FIG. **33** is a cross-sectional side view of the adhesive applicator cartridge of FIG. **28** during use;

FIG. **34** is a cross-sectional side view of an alternative arrangement of the adhesive applicator cartridge of FIG. **28** during use; and

FIG. **35** is a flow chart showing a method of manufacturing a notepad in accordance with one embodiment or the present invention.

DETAILED DESCRIPTION OF THE DRAWINGS

Referring to the drawings, where possible like components are referred to using like reference numerals.

The present invention will be described below in relation to its application for use in the formation of a notepad. However, it will be appreciated that the present invention may be equally employed in the formation of a variety of different types of documents and other products that comprise a plurality of sheets of fibrous material, such as paper, grouped together. Further, the notepads referred to in the present application may be employed for use in a variety of differing applications, other than for writing or making notes. In this regard, the notepads of the present invention need not be for writing on, but may be prior printed with material such that they can be used as advertising products, or as photo pads. It will be appreciated by those skilled in the art that throughout the present application the term "notepad" will be assumed to broadly mean any form of document comprising a plurality of sheets of fibrous material grouped together.

Referring firstly to FIG. **1**, there is shown a notepad forming device **10** comprising a feeder mechanism **20**, alignment correction means **30** (refer to FIG. **3**), longitudinal cutting means **40**, adhesive applicator **60**, lateral cutting means **80**, stacking means **100** and forming means **120**. In a preferred form, the loaning means **120** is a pressing means, particularly where the adhesive used by the adhesive applicator **60** is a pressure sensitive adhesive.

Referring to FIG. **1***a*, in a paper processing device **10***a*, a paper sheet **24** is moved and controlled through the use of feeder rollers **23** onto the planar panel or main body **26**. A shearing cutting wheel **43***h* is located substantially above the planar panel. The shearing cutting wheel **43***b* has a cutting edge penetrating the paper **24** through the plane of the upper surface of the planar panel **26**. The cutting wheel **43***b* is mounted for rotation about an axis above the planar panel **26**, parallel to the planar panel upper surface and normal to the direction of travel of the paper **24**. The cutting wheel **43***b* counter rotates with a complimentary shearing edge wheel **44***b* located substantially below the planar panel **26**. The shearing action of wheels **43***b*, **44***b* creates one or more longitudinal slits in the paper **24**, whereby to determine the width of longitudinally cut paper **24***b*. In this specification, reference to longitudinal means in the direction of travel of the sheet **24** over the planar panel **26**, whereas transverse or lateral means across the line of travel of the paper **24**.

The paper **24** may then be cut transversely to a predetermined length by a transverse cutting module including a transverse cutting wheel **80** mounted on a rail/linear bearing **187**. Of course, the various operations in the series of processes performed by the devices **10**-**10***f* can be interchanged and varied in order or, performed simultaneously, depending on their nature. However, typically the preferred order of cutting will be longitudinal as the sheet **24** is conveyed from the feeder mechanism **20** to the stacking mechanism **120**, followed directly or indirectly by transverse cutting. The adhesive, printing or indicia stamping operations, particularly where the operation applies something to the paper **24** parallel to the direction of paper **24** travel, are preferably performed as the paper **24** travels over the panel **26**.

The transverse cutting module **180** may include a cutting wheel **87** and a shearing edge **84**. The transverse cutting module **180** also includes an adhesive tape applicator **181** whereby adhesive is applied to each sheet of cut paper **24***b*. The paper **24***b* is stacked on a retractable shelf **103** that linearly vertically reciprocates by the operation of a scissor lift **122**. Each time that the roller **181** for the tape/glue passes over the stack **121** of cut paper **24***b*, the retractable shelf **103** compresses the stack **121** and the cut sheets **24***b* are glued together.

FIG. **1***b* shows part of the arrangement of FIG. **1***a* in plan view. The sheet of paper **24** is fed from the feeder mechanism **20** (not shown) through to the longitudinal cutting means **40** comprising a triplet of longitudinal cutting wheels **43**. The longitudinal cutting wheels **43** may be variously spaced along a single shall **40***a*, but are preferably equispaced. Multiple, optionally employable, shafts that are vertically retractable may be employed to effect a variety of longitudinal slit combinations. The transverse cutting-adhesive transfer tape head **180** is shown mounted on a linear rail **183** and is mounted for reciprocal linear motion along the rail **183** as indicated by the arrows **183***a,b*.

FIG. **1***c* is a perspective view of the device **10***a* shown in FIGS. **1***a, b* and schematically shows the paper **24** fed in direction x. The paper **24** is longitudinally cut by the longitudinal cutting wheels **43** to produce four (4) strips of paper **24***a* or equal width. The four strips **24***a* are transversely cut by the transverse cutting wheel **180** reciprocally travelling along the rail **183**.

In FIG. **1***d*, a paper processing device **10***d* provides a series of pairs of counter rotating rollers **82***a,b* operable to hold the sheet **24** firmly against the panel/body. **26** and under tension to achieve a clean, linear, longitudinal cut by the longitudinal cutting wheel **43** counter rotated against a complimentary shearing edge wheel **44**. The paper **21** is then cut again by a transverse blade **87** cutting against a shearing edge **84** and then fed onto a stack **121** and compressed by another roller **186**. Adhesive paper or glue may be applied before, during or after the longitudinal cut elected by the wheels **43**, **44**.

In FIG. **1***c*, a device **10***ba* having a different type of feeder mechanism **220** is shown comprising a horizontal stack feeder **221**. Paper **24** is picked up of the stack **21** by a roller **23** and fed through the apparatus **10***b* by further rollers **82***a*, **82***b* counter rotated with complementary rollers substantially below the line of the planar panel **26**. The paper **24** is longitudinally cut by a longitudinal cutting wheel **43** counter rotated against a shearing edge wheel **44** beneath the planar body **26**. A transverse cutting punch **190** cuts the longitudinally cut paper **24***a* to length. The longitudinally cut paper **24***a* is thus controlled onto a stack **121**. The cut paper stack **121** is then compressed by a platform **206** that extends through an opening **230** in the stack holder **209**. The platform **206** is vertically reciprocally mounted on a scissor lift mechanism **122**.

Above the stack **121** and opposed to the platform is a floating floor **207**. When a predetermined amount of paper **24***a* has accumulated on stack **121**, the platform **206** is pushed against the bias of compression springs **208** from which the floating floor **207** is suspended. This compression of the stack **121** presses the adhesive and forms a pad from the stacked sheets **121**. An adhesive tape applicator **60** is provided to apply adhesive to the paper **24** in longitudinal strips. An adhesive applicator can be included at various alternative spots in the series of operations performed by the device **10***b*, for example, before or after the longitudinal cutting means **43** at positions **160***a,b* as shown in FIG. **1***f*.

A different arrangement is shown in FIG. **1***g* in which a device **10***c* comprises a sticker or stamp applicator **170**. The application of stickers or stamps, for example to memo pads, may be advantageous. In this case, the stamp applicator **170** includes a free running wheel **171** above the sheet **24** and the planar panel **26**, immediately following the feeder mechanism **20** and prior to the longitudinal cutting means **43** in the series of operations performed by the device **10***c*. However, the skilled person will appreciate that the stamp/sticker applicator **170** can be incorporated in or on the device **10***c* at a variety of positions, for example, before or after the longitudinal cutting means **43**, and may or may not be used in series with a glue/tape applicator of the type described with reference to FIG. **1***e*.

Turning to FIG. **1***h*, an arrangement **10***d* is shown that is similar to device **100** shown in FIG. **1***g*, but includes a printer head **172** before or after the longitudinal cutting means **43** to apply graphics such as headings or images to the paper **24**. The printer head **172** can be used in series with an adhesive tape applicator **60** (see FIG. **1***e*), or can be used in its own right, i.e. merely to apply printed indicia or images to sheets **24** preparatory to forming cut sheets **24***a* in as the form of a pad. The printer head **172** may be located above and/or below the planar panel **26**, depending on the sheet lace (upper or lower facing) to be printed on.

In FIG. **1***i*, arrangement **10***e* is similar to arrangement **10***d* shown in FIG. **1***h*, but includes a sticker applicator **174** instead or a printer head. The sticker applicator **174** that may be located above and/dr below the planar panel **26**, and before or after the longitudinal cutting means **43** in the device **10***e* operational series.

In FIG. **1***j*, the arrangement is similar to those of the devices **10***c*-**10***e* shown in FIGS. **1***g*-**1***i* respectively, but includes a laser printer head **175** to apply graphics, headings and/or images. Again, the laser printer **175** of device **10***f* may be used together with an adhesive applicator **60**, or can be used in its own right.

In FIG. **2**, there is shown the feeding mechanism comprising an uncut sheet stacking rack **22** for stacking uncut sheets **21** and driven rollers **23***a,b* with high frictional surface material to grip and drag the upper most sheet **24** towards the longitudinal cutting means shown in FIGS. **5** and **6** in the manner of standard paper or polymer film sheet feeding mechanisms found in feeder tray mechanisms of photocopiers, fax machines and standards.

In FIG. **3**, the optional alignment correction means **30** is shown from a plan view. This portion of the feeder mechanism is not expressly shown in the drawing or FIG. **1**, but is located between the rollers **23***a,b* of feeder mechanism **20** and the longitudinal cutting means **40**. The alignment mechanism **30** comprises a pair of coaxially aligned feed rollers **32***a,b* separately driven by respective stepper motors **33***a,b*. The alignment mechanism **30** draws sheet **24** from the feeder mechanism **20**.

The pair of rollers **23***a,b* act upon the top sheet of paper **24** in the stack **21** to draw it from the sheets below and to feed it into the alignment/position detection zone of the alignment mechanism **30** shown in FIG. **3**. The sheet alignment detection means **30** involves feeding the sheet of paper **24** across the main body **26** of the machine **10**. A pair of sensor arrays **31***a,b*, labelled respectively array A and array B, each comprise a linear array of photodiodes.

As the sheet **24** passes over the sensor arrays **31***a,b*, the sensor arrays issue to a CPU a signal corresponding to the leading edge **27** of the sheet **24** as it passes over the arrays **31***a,b*. The position of the edge **27** is determined liar each sensor array **31***a,b* and compared by the CPU software. If both sensor arrays **31***a,b* show the position of the edge **27** to be substantially the same (in time and space), then this indicates to the CPU that the sheet of paper **24** is being fed in correct alignment relative to the body **26**.

However, if the edge **27** position is different for the two sensor arrays **31***a,b*, then it is an indication that the sheet **24** is not correctly aligned. If this occurs, the CPU through an operator display may flag an error situation and halt, or the alignment mechanism **30** may be equipped to straighten the sheet **24** as an optional additional feature of the device **10**. Prior to the sheet **24** passing over the sensor arrays **31***a,b*, the sheet **24** will pass under a roller **32***a,b* on each side of the sheet **24**. Each roller **32***a,b* is independently driven by its own stepper motor **33***a,b*. If the sheet **24** is determined to be incorrectly aligned, this situation can be corrected by advancing one motor (for example stepper motor **334**) and or retreating the other motor (for example stepper motor **33***b*) or holding the other motor (**33***b*, **33***a* respectively) stationary. In this manner, the sheet **24** may be adjusted into square alignment, using the pair of sensor arrays **31***a,b* to check the sheets **24** position in real time. As alluded to above, this is an optional feature and may be provided only in preferred embodiments or the invention.

Prior to passing completely over the sensor arrays **31***a,b*, the position of the leading edge **27** of the sheet **26** is logged by the CPU so that a datum (reference point) is established. This allows the CPU to calculate the number of steps required to advance the stepper motors **33***a,b* before the sheet edge **27**

passes into the final lateral slitting or cutting stage (corresponding to lateral cutting means). This allows the CPU to compute the exact number or steps to advance the stepper motors of the device for achieving a predetermined length of final cut of the sheet **24**.

In FIG. **4** there is shown the signal feedback to the CPU from the photodiodes of arrays A and B **31***a,b* to demonstrate the mechanism for, detecting the leading edge **27** and to signal mal-alignment of the sheet **24**. In FIGS. **4**(*a*) and (*d*) the sheet **24** is correctly aligned square to the body **26**. Pixel numbers increase as the sheet **24** passes over them and pixel voltage dramatically increases, thereby enabling the CPU to log the datum liar each side of the sheet **24**.

However, in FIG. **4**(*b*) the sheet **24** is biased towards one side and leading sheet edge **27** reaches array A (**31***a*) first thereby indicated to the CPU that the speed of stepper motor **33***b* should be increased relative to that of stepper motor **33***a* to effect an adjustment of the sheet's **24** alignment. In FIGS. **4**(*c*) and (*f*) the reverse situation is indicated in that the sheet **24** is skewed towards stepper motor **33***a* so that edge **27** reaches array B (**31***b*) before array A (**31***a*) and the speed of stepper motor **33***a* should be increased relative to stepper motor **33***b* to restore sheet **24** alignment.

Referring to FIG. **5**, there is shown the longitudinal cutting mechanism **40** adapted to slit the sheet **24** along a centre line **41** by the action of a free wheeling, circular blade **42** with the sheet **24** held under tension and supported by upper feed rollers **43***a,b* and lower feed rollers **44***a, b*. The sheet **24** is drawn into the first slitting operation performed by the longitudinal cutting means **40** by the driven lower feed rollers **44***a,b* (noting that lower feed roller **44***a* is obscured in FIG. **5**, but shown in FIG. **6**). Under the sheet **24** are the pair of driven elastomeric-surfaced rollers **44***a,b* that are separated by the circular knife **42**. Above the driven rollers **44***a, h* are the corresponding pair of freewheeling elastomeric rollers **43***a,b* The rollers **43***a,b* and **44***a,b* sandwich the circular slitting blade **42**.

The slitting blade's **42** cutting face is shown in detail in FIG. **6**. Interposed between the lower rollers **44***a,b* is a slitting edge **45** that comprises a planar circular disc or ring attached to so the inner side of the lower roller **44***b*. The slitting edge **45** rotates with the lower roller **44***b* to create a scissor-like interaction between the freewheeling slitting blade **42** and the driven slitting edge **45**.

Accordingly, the slitting blade's **42** cutting face is in contact with the cutting lace of the slitting edge roller **45**. The lower rollers **44***b*, **44***a*, being driven, draw the sheet **24** through the longitudinal cutting means **40** whilst the slitting edge roller **45** slits the sheet along the sheet's **24** centre line **41** to form a longitudinally split sheet **24***a* split down its centre.

In FIG. **6***a*, there is provided a punch/knife **142** adapted to punch a longitudinal or transverse slit in a sheet of paper **24**. The paper **24** is supported on a resilient elastomeric medium **27** that, in turn, is supported on the fixed support of the planar panel **26**. The knife punch **142** may be used to affect either or both longitudinal or transverse cuts and may include a single knife blade **143** or multiple knife blades as shown.

Referring to FIG. **6***b*, as described in FIG. **1***b*, the number of longitudinal cutting means **43** and the spacing thereof on a shaft **40***a* may vary to determine the width of the longitudinal strips **24***a* produced downstream of the longitudinal cutting means **43** us the paper **24** proceeds in direction y. As previously described, the multiple cutting heads **43** may be mounted on a single shall **40***a* or on two or more alternative retracting shahs:

Referring to FIGS. **6***c* and **6***d*, there is shown a laser cutting head **144** mounted on a set of rails/linear bearings **145***a,b,c* driven by motors **146***a,b* to give the laser cutting head **144** full to movement in two dimensions. The motors **146***a,b* control the direction and speed of the laser cutting head **144**, which can be used for both longitudinal and transverse cutting of the paper **24** (not shown in this drawing). In this embodiment, lead screws on the bearings are used as the translation means of the rail/linear bearing mechanisms of rails **145***a,b,c* and the drive mechanisms **146***a,b*.

Referring to FIGS. **6***e* and **6***f*, a laser cutting and translation arrangement similar to that shown in FIGS. **6***c* and **6***d* is shown, except that the laser cutting head **144** is driven using belt drives **147***a,d*, the belt drives **147***a,b* having linear bearings.

Referring to FIGS. **7** and **8**, the adhesive applicator **60** is shown in more detail. Immediately following the slitting rollers **43***a,b* and **44***a,b*, the cut sheet **24***a* is led into an assembly comprising eight elastomeric rollers **61**,**62**. The assembly of the base rollers **61**,**62** is divided into two rows of lour rollers each one row of four rollers **61***a-d* above the cut sheet **24***a*, the other lower complementary row of four rollers **62***a-d* located in a juxtaposed position vertically below the cut sheet **24***a* and in contact with the corresponding upper rollers **61***a-b* above.

The lower, outer pair of rollers **62***a,d* are driven at the same surface speed as the slitting rollers **44***a,b*. The upper, outer pair of rollers **61***a,d* are allowed to free-wheel and are in contact with the lower pair of corresponding outer rollers **62***a,d* These two pairs of rollers **61***a,d* and **62***a,d* drive the cut sheet **24***a* through the adhesive applicator **60**.

The inner, upper pair of rollers **61***b,c* are freewheeling and in contact with a pair of so parallel-aligned ribbons or strips of adhesive transfer tape **63***a,b*. One ribbon or adhesive transfer tape **63***a* passes around the outer surface of upper inner roller **61***b* and the adjacent ribbon or adhesive tape **63***b* passes around the outer surface of upper freewheeling inner roller **61***c*.

Furthermore, the inner lower pair of rollers **62***b,c* are freewheeling and in contact with the adjacent ribbons of adhesive transfer tape **63***a,b*. The upper two pairs of inner rollers **61***b,c* press the cut sheet against the lower corresponding pairs of rollers **62***b,c* to apply the adhesive to the corresponding inner strips of cut sheet **24***a* along its cut edge **41** as the cut sheet **24***a* passes through.

The lower pair of inner rollers **62***b,c* apply pressure to the cut sheet **24***a* which is pressed against the adhesive transfer tape **63***a,b* thereby causing adhesive to be applied to the upper surface of the sheet **24***a* (not shown). It is noted that, in use, the adhesive is on the underside surface of the sheets of the notepad and that the upper surface of each sheet is effectively adhesive-free.

In FIG. **8***a*, there is shown an adhesive transfer tape applicator **161** mounted on a vertically reciprocal stamp head **162** and having driven roller wheel **161***a,b* to roll the tape **163** with each successive stamping operation, in use, the adhesive applicator **161** rises up and down to stamp the paper **24** supported by a fixed support **26***a* to stamp adhesive straight onto the paper **24**.

In FIG. **8***b*, an adhesive stamp applicator **161** similar to that shown in FIG. **8***a* is to provided with a blade **143***a* to effect longitudinal cutting or transverse cutting of the paper **24**, whereby to combine the adhesive application and cutting operations in a single stamping operation.

In FIG. **8***c*, an end sectional view of the cutting/adhesive applicator **161** of FIG. **8***b* is shown in which the cutting blade **143***a* is a longitudinal cutting means and the adhesive transfer tape **163** is applied to longitudinal strips of the cut paper **24**. The support base **26***a* includes a recessed slot **26***b* that the punch knife **143***a* enters as it cuts through the width of the

paper **24**. The recessed slot **26***b* is a shearing edge complimentary to the blade **143***a* to effect a clean transverse cut of the paper **24**.

FIG. **8***d* shows a variation of the previous adhesive transfer tape applicators shown in FIGS. **8***a* and **8***b*, wherein the stamp **161***ii* applies the adhesive to the paper **24** by a rocking motion. The stamp applicator head **166** has a curved lower surface **167** to allow the stamp head **166** to roll along the supported paper **24** surface to achieve good contact between the adhesive tape **163** and the supported paper **24** surface, in FIG. **8**; the concepts of the device **161***i* and **161***ii* are combined whereby the adhesive applicator and blade stamp **161***iii* provides a rocking motion stamp of adhesive onto the paper **24** and a curved longitudinal cutting blade **148** to perform the cutting operation.

In FIG. **8***f*, the stamp applicator concept is utilised in a stacking mechanism **220** in which the stamping adhesive applicator **161***iv* not only applies adhesive tape/glue via tape **163** to the sheets **24***a* as they enter a stack **121**, but also serve to compress the stack **121** to press the sheets together, index the stack downward and form the pad as an end product. A transverse cutting wheel **87** is also provided to cut the paper **24***a* to length. This is demonstrated in FIG. **8***g* where the paper **24***a* has been cut by the cutting member **87**, rolled on to the stack **121** by roller **82** and pressed onto the stack **121** by the stamp head **162**.

The longitudinally cut sheet **24***a*, slit along its centre line **41**, is conveyed by rolls **62** to the lateral cutting means **80** shown in FIGS. **9-11**. The lateral cutting means **80** is adapted to cut the two halves of cut sheet **24***a* to the correct length using the datum as the reference point logged by the sensors **31***a,b* in conjunction with the CPU. The slit sheet **24***a* is fed through a transverse slitting support guide **81** by a driven rubber, roller **82** to the extent calculated by the number of predetermined motor **92** steps relative to the datum and/or as determined by the settings entered by an operator to the CPU controlled computer. The cut sheet **24***a* passes through a pair of elastomeric, rollers **83**,**85** located on the other side of the transverse slitting edge **84** located immediately below the slitting support guide **81**.

The external pair of rollers **83**,**85** are directly in contact with each other, or indirectly, when interposed by the cut sheet **24***a*. The top roller **85** is driven with its rotational axis **86** located slightly further away from the slitting edge **84** relative to the axis of rotation **88** of the lower roller **83**. When the cut sheet **24***a* has been led past the slitting edge **84** by the correct length, the cut sheet **24***a* is preferably stopped to best perform the transverse cutting operation. Although the skilled reader will appreciate that arrangements are possible where the cut sheet **24***a* is constantly in motion and laterally cut by a guillotine rather than a rolling blade as described below.

As the cut sheet **24***a* proceeds past the slitting edge **84**, the transverse slitting assembly **80**, including a slitting blade **87** and an elastomeric rubber pressure roller **89**, is drawn across a determined lateral cutting line **90**. As alluded to above, an alternative to this rolling blade is arrangement **87**,**89** is a vertically displaced guillotine arrangement which may permit the cut sheet **24***a* to be in constant motion, although greater accuracy in the cutting length of the paper **24** may be achieved by stopping the motion of the cut sheet **24***a* immediately prior to effecting the lateral cutting action. In this arrangement, the rubber pressure roller **89** contacting the slitting support guide **81** is effective to hold the cut sheet **24***a* flat whilst the lateral slitting operation is effected forming a laterally cut sheet or strip **24***h*.

With regard to FIG. **11**, the stacking means **100** is shown. The laterally cut strip **24***b* is fed into a stack **101** of similar strips **24***h* stored in a stacking table or rack **103** that has a front fixed wall **107** and an adjustable rear wall **102** to accommodate different sized cut strips **24***b* terming a uniformly sized stack **101** of cut strips **24***h*. The laterally cut strip **24***b* is driven free of the outer pair of rollers **83**,**85** and allowed to fall onto the stack of cut strips **101** below it with the adhesive bearing strip along its inner longitudinal edge uppermost.

With reference to FIGS. **12** and **13**, the cut strips **24***b* are compressed by the pressing means **120** to term a notepad **121**. Once a sufficient and predetermined number of cut strips **24***b* have collected forming the stack **101**, a platform **106** forming the floor of the stacking rack **103** is raised by a scissor lift **122** having right and left hand threaded lead screws **123***a,b* and pressed against a fixed barrier **125** to cause the adhesive on each upper strip surface to stick to the immediately adjacent underside surface of the next-above strip **24***b* to form the notepad **121**. The pressing operation may be performed immediately following each new deposit of a cut strip **24***b* onto the stack **101** whereby to incrementally form the compressed stack that, in turn, forms the notepad **121**. Alternatively, the pressing operation can be performed at predetermined intervals, such as when the uncompressed stack **101** is becoming too high to feed a new cut strip onto the stack **101**.

In FIG. **13***b* there is shown a stacking mechanism **225** in which the floor **226** is sprung or floating to permit the floor **226** to index down with the accumulation of paper in each cassette or discreet section **227**. FIG. **13***a* specifically shows cut sheets each forming a stack **121**. The stacking mechanism **225** is suitable for receiving sheets **24** longitudinally cut by duel spaced blades such as the blades **143** shown in FIG. **6***a*.

In FIG. **13***c*, the cassette stacking box **225** is shown with its sprung floor **226** each supported on a platform **106**. A punch blade **243** having slots **244** corresponding to the internal walls **228** of the stacker box **225** to ensure that the blade **243** cuts the paper **24** without interfering with the walls **228**, the paper **24** being supported for the punching-cutting operation by the platform **106** and/or the previously cut sheets already stacked in stack **121**. The stack **121** is supported on the sprung floor **226** that indexes down against the bias of the sprung floor **226**.

Referring to FIG. **13***d*, the paper **24** fed into the stacker mechanism **225** is transversely cut by transverse cutting means **87** in the form of a rolling blade, the blade **87** cutting against the shearing edge of the frame **84** (not shown). In this arrangement a roller **82** first feeds the paper **24** partially past the transverse cutting means **87** before the rolling cutting blade **87** is lowered to effect a transverse run across the sheet **24** to effect the transverse cut.

FIG. **14** demonstrates the relationship between the current required to drive the scissor lift **122** and the compression distance between the rack floor **106** and the barrier **125**. It indicates that compressing the loosely packed sheets **24***b* require little work, but as the stack **101** becomes compacted, further compression is not possible without large compressive forces and the motor current required increases dramatically.

Once the notepad **121** has been formed, the stack rack **103** may be lowered, the notepad removed from the stack rack **103**, for example by an operator, and the cycle of notepad production re-started.

In FIG. **15**, the device **10** is shown in complete form with A4 size paper **24** stacked in the feeder **20** ready for processing.

In FIG. **16**, the drive motor **91** for the lateral cutting means **80** is shown. The central module **140** houses the above body panel components of the alignment correction means **30**, longitudinal cutting means **40** and adhesive applicator **60**.

In FIG. **17** the stacking means **100** may include a stacking rack (not shown) resting above the scissor lifts **122**. The drive motor (obscured) for rollers **23***a,b* is located behind vertical side panel **28** and under body panel **26**.

In FIG. **18**, the pinion gearing **92** is driven by a motor (obscured) that, in turn, drives rollers **44***a,b*.

In FIGS. **16** and **18-22**, the adjustable wall **102** of the stacking rack and the scissor lift screws **122** including lead screws **123***a,b* are shown in various arrangements. As shown in FIGS. **18-22** and particularly FIG. **22**, the sub-structure of the device **10** under the body panel **26** includes the photo-diode sensors **31***a,b*, and rollers **44***a,b* and **62***a-d*.

Referring finally to FIGS. **23***a-e*, there is shown a variety of different punch blade shapes that may be usefully employed in the transverse or longitudinal cutting operations of the various pad forming devices, and particularly the longitudinal and/or lateral cutting means herein described. In each a complimentary slot, recess or other shearing edge **26***c* an example being shown in FIG. **23***e*) may be advantageously provided.

The devices shown and described herein, including devices **10-10***f*, may be made from standard-materials typically associated with office equipment such as printers, photocopiers and scanners. The knife or blade components **42**,**45**,**84**,**87** are preferably made from stainless steel or tungsten carbide. The roller surfaces are preferably made from elastomeric polymer materials typically associated with paper feeder rollers found in printer and fax machine equipment.

The preferred pressure-sensitive adhesive for the sheets is an acrylate copolymer microsphere structured adhesive as disclosed in U.S. Pat. Nos. 3,691,140 (issued to Silver on Mar. 3, 1970) and 3,857,731 (issued to Merrill et al on Apr. 6, 1973). This type of adhesive allows for the removal or separation of the sheets and the repositioning of the dispensed sheets on different receptor surfaces without injury to the surfaces.

Within the meaning of this specification, a desk top device may be a unitary device such as a printer, fax machine or photocopier. For example, the desk top device may be small in size and no larger than 1.2 m^3, preferably less than 0.3 m^3 and still more preferably less than 0.2 m^3 in volume and/or has a foot print that is less than 1.2 m^2, preferably less than 0.5 m^2 and still more preferably less than 0.4 m^2.

Referring to FIG. **35**, the method **200** of forming a notepad according to a preferred embodiment of the present invention is shown. The method **200** comprises a number of steps as previously described.

In step **201**, one or more sheets are loaded into the notepad forming device in a predetermined orientation. The sheets are then fed into the device in step **202** for processing. At step **203**, the or each sheet is cut to a desired dimension by a cutting means in the manner as previously described. At step **204**, adhesive is then applied to a portion of the cut sheet following which, the sheets are stacked into position in step **205**. The stacked sheets are then formed into the notepad, whereby they are available to a user of the device for collection in step **206**. The step of forming the sheets into a notepad may comprise pressing the sheets together top facilitate bonding of the re-positionable adhesive, when snob an adhesive is used with the method **200** in step **204**. It will be appreciated that when non-repositionable adhesive is used the step of forming the notepad will not require a pressing step. Ti will also be appreciated that the order of the steps **201-206** may vary. For example, the cutting step **203** and the adhesive application step **204** may be performed in reverse order. Similarly, the collation step **205** and the formation step **206** may be performed in a single step.

The present invention also provides for a replaceable adhesive applicator cartridge for use with a notepad forming device **10** as described above. However, it will be appreciated by those skilled in the art that the replaceable adhesive applicator cartridge could be equally applied in relation to a variety of sheet processing devices that process planar sheets or fibrous material, such as paper and other print media, into bound documents.

Referring to FIG. **24**, a notepad forming device **10** is shown. As discussed above, the notepad forming device **10** is a desk-top unit that receives a plurality of individual planar sheets **12** loaded into a sheet loading mechanism **14**. The device **10** then processes the sheets **12** to form one or more pads **15** of processed sheets that are delivered to an output tray **16** for collection and use. The pads **15** formed by the device **10** comprise a stack of sheets of a size predetermined by the user. Each sheet is bound together to form the pad **15** by a suitable adhesive applied to a common edge of each sheet in the stack. As previously discussed, the suitable adhesive may be applied to an underside of each sheet such that when each sheet is stacked to form a pad **15**, the adhesive binds the sheets together. It will be appreciated that the manner in which the sheets are bound together to form pad **15** may vary and still fail within the spirit of the present invention.

The size of the pads **15** formed by the device **10** may vary in accordance with the requirements of the user. To achieve a variety of pad **15** sizes, the device **10** includes lateral and longitudinal cutting means as described above; to cut the individual planar sheets **12** into a desired size. The longitudinal and latitudinal cutting means are controlled in accordance with instructions received by a user of the device.

The sheets **12** loaded into the device **10** are typically sheets of paper or similar print media. The sheets **12** may be A4 or foolscap sized sheets and may be printed on one or both sides, or may be virgin sheets of paper. The sheets **12** may be previously printed sheets of paper to facilitate the recycling or reuse of such paper into pads **15**. It will be appreciated that the sheets **12** may also be in the form of sheets of cardboard, plastic or other polymeric material suitable for processing by device **10**.

The processed sheets are bound together by an adhesive which is applied to one or more surfaces of sheet during processing. In this regard, the device **10** has one or more sheet handling members in the limn of driven rollers or the like which transport individual sheets **12** from the sheet feeding mechanism **14**, through a cutting means and an adhesive applicator, to be delivered in the form of a pad **15** to the output tray **16**.

The adhesive used to hind the processed sheets together into the pad **15** may vary depending upon the type of pad **15** required. To form pads **15** the type in which individual sheets can be removed and repositioned on another surface, such as a Post-It™ note pad marketed under the trademark "Post-It" by Minnesota Mining and manufacturing Company, St. Paul, Minn., the adhesive may be a low-tack or pressure sensitive adhesive. To form pads **15** having more firmly bound pages or sheets, a higher strength or permanent adhesive may be employed. In the event of a permanent adhesive being used in the device **10** individual sheets of the pad **15** may contain a frangible portion such a perforated region, to facilitate the removal of individual pages from the pad **15**, during use.

The adhesive used by the device **10** may be interchangeable or replenishable through the use of a replaceable or replenishable adhesive applicator cartridge **50**. The adhesive applicator cartridge **50** may be accessed by way of an access port **18** formed in a surface of the device **10**. Upon accessing the adhesive applicator cartridge **50**, the user may replace the

cartridge **50**, or replenish the adhesive contained within the applicator cartridge **50** where appropriate.

A variety of different types of adhesive applicator cartridges are shown in FIGS. **25-28**.

Referring to FIG. **25**, a first type of adhesive applicator cartridge **50** is shown. The cartridge **50** comprises a body **52** that is shaped to be received within suitable recess formed in the device **10**. The body **52** has a pivot point **54** fanned therein, to define a point about which the body **52** is able to pivot during use. The pivot point **54** may be in the form of a recess or indentation formed in the body **52** which receives a pin or lug (not shown) provided on the device **10** when the body **52** is mounted thereto. Alternatively, the pivot point **54** may be a lug provided to extend from the surface of the body **52** to be received within a corresponding recess provided in the device **10** when the body **52** is mounted thereto.

The body **52** has a bore **53** formed therethrough that receives a cylinder **55**. The cylinder **55** is shaped to receive an adhesive **56** therein. The adhesive **56** is in the form of an adhesive stick, or similar elongate shape, and is inserted into the cylinder **55** and retained therein. A cap **57** may be provided on an end of the cylinder **55** to seal the end of the stick of adhesive **56**.

The stick of adhesive **56** is received within the cylinder **55** such that it projects beyond a lower surface of the cylinder **55** as shown in FIG. **25**. A control mechanism (not shown) may be provided with the housing **52** to control, longitudinal movement the stick of adhesive **56** within the cylinder **55**. The control mechanism may be configured to appropriately advance the stick of adhesive as it is consumed during use, to ensure that a portion of the adhesive **56** constantly projects beyond the end of the cylinder **55**. The control mechanism may also be configured to retract the stick of adhesive **56** within the cylinder **55** when not in use, and may also be configured to provide a warning signal to the user of the device **10** when the adhesive **56** requires replacement.

Referring to FIGS. **29***a* and **29***b*, the adhesive applicator cartridge **50** in FIG. **25** is shown located within the device **10** for use. FIG. **29***b* shows the cartridge **50** in an idle position. In this idle position, cartridge **50** is pivoted away from transport surface **5**, namely the surface upon which a sheet **12** being processed by the device **10** is transported. In such a position, the stick of adhesive **56** is unable to contact a sheet **12** passing thereby to deposit adhesive thereon.

Upon initiation of the device **10**, the feed roller **2** feeds individual sheets **12** from the sheet loading mechanism **12** to advancement rollers **4***a* and **4***b*. Advancement roller **4***b* is a driven roller that is driven at substantially the same speed as the feed roller **2** to provide constant feeding of the sheets **12** past the adhesive applicator cartridge **50**.

Upon detection of a sheet **12** being received by the advancement rollers **4***a* and **4***b*, the cartridge **50** is brought into an adhesive application position as shown in FIG. **29***a*. In this position, the sheet **12** is transported by advancement roller **4***b* and an edge of the driven sheet **12** is located between the end of the stick of adhesive **56** and the free advancement roller **4***b*. In this arrangement, adhesive is directly applied along an edge of the sheet **12** as the sheet **12** is advanced past the cartridge **50**.

Upon detection of the sheet **12** progressing beyond the advance rollers **4***a* and **4***b*, the cartridge **50** is caused to pivot to its the idle position (FIG. **29***b*) to release the sheet **12**. The cartridge remains in the idle position until a corresponding sheet **12** is detected in the region of the advancements rollers **4***a*, **4***b*.

It will be appreciated that one or more proximity sensors (not shown) may be employed to detect the position of the sheet **12** being processed as it travels along the transport surface **5**. The proximity sensors may be used to control pivotal movement of the cartridge **50** between the idle position and the adhesive application position, as desired. Such sensors and the operation thereof are well known in the art.

It will also be appreciated that one or more lateral and/or longitudinal cutting means may be positioned adjacent to, or in association with, the cartridge **50** to cut the sheet **12** into desired dimensions.

An alternative embodiment of the arrangement of FIGS. **29***a*, **29***b* is shown in FIG. **30**. In this arrangement, each of the advancement rollers **4***a*; **4***b* are connected by belt **3** to aid in the advancement of the sheet **12** past the stick of adhesive **56**. A plate **6** is located between rollers **4***a* and **4***b* to provide a surface against which the stick of adhesive **56** can act to facilitate the deposition of adhesive onto the surface of sheet **12**.

Referring to FIG. **26**, an alternative embodiment of an adhesive applicator cartridge **65** is shown. The cartridge **65** comprises a body **67** that is shaped to be received within a suitable recess formed in the device **10**. The body **67** has a recess or pivot point **69** formed therein to define a point about which the body **67** is able to pivot during use. The pivot point **6.9** may be in the form of a recess or indentation formed the body **67** that receives a pin or lug (not shown) provided on the device **10** when the body **67** is mounted thereto. Alternatively, the pivot point **69** may be a lug provided to extend from the surface of the body **67** to be received within a corresponding recess provided in the device **10** when the body **67** is mounted thereto.

The body **67** is in the form of a hollow receptacle having a storage reservoir **70** for storing a volume of liquid adhesive **66**. The reservoir **70** is accessible by way of an inlet **68** to facilitate filling thereof. The inlet **68** is sealed by a cap **71** which can be removed to facilitate refilling of the reservoir when required.

An applicator **73** is mounted at a lower end of the body **67** so as to be in fluid communication with the liquid adhesive **66** contained within reservoir **70**. The applicator **73** comprises a ball or roller member **72** secured within an outlet chamber **74** of the reservoir **70** such that it is free to roll therein. The ball or roller member **72** projects at least partially from the chamber **74** to apply adhesive **66** to a surface of a passing sheet, in the manner as described below.

The adhesive applicator cartridge **65** is shown in use in FIG. **31**. The cartridge **65** is mountable to the device **10** such that it is free to pivot about pivot point **69** in the direction of arrow C. It will be appreciated that when the cartridge **65** is in an idle position, the body **67** is pivoted away from the transport surface **5** such that the ball or roller **72** is positioned remote therefrom.

A sheet **12** is advanced towards the cartridge **65** in the direction of arrow D. Upon detection of the sheet **12** being adjacent advancement roller **7**, the cartridge **65** is pivoted into an application position, as shown in FIG. **31**. In the application position, the ball or roller **72** acts against the surface of the sheet **12**, preferably adjacent an edge of the sheet **12**, such that the sheet **12** is sandwiched between the ball or roller **72** and the advancement roller **7**. Rotational movement of advancement roller **7** is transferred to the ball or roller **72** of the cartridge **67**, thereby applying adhesive to the surface of the sheet **12** as it travels therebetween.

Upon detection of the sheet **12** passing beyond the ball or roller **72**, the cartridge **65** is to then pivoted to the idle position such that another sheet **12** can be advanced for application of the adhesive thereto.

It will be appreciated that as the liquid adhesive **66** is applied to the sheets **12**, the volume of liquid adhesive **66** present therein will become depleted. Upon detection of the volume of the liquid adhesive reaching a critical level, a sensor may provide an indication to the device **10** to warn the user to replace and/or replenish the cartridge **65**.

Referring to FIG. **27**, yet another embodiment of an adhesive applicator cartridge **75** is shown. In this embodiment the cartridge **75** comprises a body **76** that is shaped to be received in a suitable recess formed in the device **10**. The body **76** has a pivot point **78** formed therein, to define a point about which the body **76** is able to pivot dining use. The pivot point **78** may be in the form of a recess or indentation formed in the body **76** that receives a pin or lug (not shown) provided on the device **10** when the body **76** is mounted thereto. Alternatively, the pivot point **78** may be a lug provided to extend from the surface of the body **76** to be received within a corresponding recess provided in the device **10** when the body **76** is mounted thereto.

The body **76** has a central bore **77** having a cylinder **79** secured therein. An adhesive **46**, in the form of a stick, is shaped to be inserted within the cylinder **79**. A cap **47** may be provided on an end of the cylinder **79** to seal an end of the stick of adhesive **46**. The stick of adhesive **46** is received within the cylinder **79** such that an end of the adhesive **46** projects onto a roller applicator **48** that is rotatably secured between a pair of arms **49** that extend from the body **76**.

In this arrangement, the stick of adhesive **46** applies adhesive directly onto the roller applicator **48**, as the roller applicator **48** rotates about its central axis. A control mechanism (not shown) may be provided on the body **76** to control the advancement of the stick of adhesive **46** within the cylinder **79**. Such a control mechanism ensures that the stick of adhesive **46** is in constant contact with a surface of the roller applicator **48** as it is being consumed during use.

The adhesive applicator **75** is shown in use in FIG. **32**. The cartridge **75** is mounted within a recess provided in the device **10**, such that it is free to pivot about pivot point **78** in the direction of arrow F. It will be appreciated that when cartridge **75** is in an idle position, the body **76** is pivoted away from the transport surface **5** such that the roller applicator **48** is located remote therefrom.

A sheet **12** is advanced toward the cartridge **75** in the direction of arrow F. Upon detection of the sheet **12** being adjacent the advancement roller **7**, the cartridge **75** is pivoted into an application position as shown in FIG. **32**. In the application position, the sheet **12** is located between the roller applicator **48** and the advancement roller **7** such that the roller applicator **48** is able to apply adhesive along an edge surface of the sheet **12** as the sheet advances. Rotational movement of advancement roller **7** is transferred to the roller applicator **48** of the cartridge **76** thereby ensuring that a continuous trail of adhesive is applied to the surface of the sheet **12**.

Following detection of the sheet **12** passing beyond the roller applicator **48**, the cartridge **75** is pivoted to the idle position such that another sheet **12** can be advanced for application of the adhesive thereto.

Referring to FIG. **28**, yet another embodiment of an adhesive applicator cartridge **34** is shown. Once again, the cartridge **34** comprises a body **36** that is shaped to be received within a suitable recess formed in the device **10**. The body **36** houses an adhesive tape **35** that is wound around the internal perimeter of the body **36** hi the manner as shown in FIGS. **33** and **34**. The body **36** also houses a moveable stamp applicator **37** that is moveable within the body **36** to apply force against an inner surface of the adhesive tape **35** such that the adhesive contained on the outer surface of the adhesive tape can be applied to a surface of a passing sheet **12**. The body **36** has an open end portion **38** through which the stamp applicator **37** and adhesive tape **35** can extend under application of a force G to the stamp applicator **37**.

Referring to FIG. **33**, the body **36** of the adhesive applicator cartridge **34** is fixed in position to provide a gap of constant width **11** between the transport surface **5** and the cartridge **34**. Upon detection of a sheet **12** adjacent the open end **38** of the cartridge **34**, the stamp applicator **37** is caused to move in the direction of arrow (**3**, such that it projects beyond the open end **38**. Such movement of the stamp applicator **53** applies a force against the inner sleaze of the adhesive tape **35**, causing the adhesive tape to project beyond the open end **38**. The stamp applicator **53** and the tape **35** apply a force to the surface of the sheet **12** thereby pressing the sheet against the plate **8** provided below the open end **38** of the body **36**. This pressing force causes the adhesive present do the outer surface of the adhesive tape **35** to be transferred to the surface of the sheet **12** in the form of a strip of adhesive. The sheet **12** is then able to be transported for collation and pressing into a pad **15**.

A plurality of winding rollers **39** are mounted within the body **36** to progress the adhesive tape **35** as it is being consumed during the application process. The consumed tape is collected on a roll which can be monitored to provide a signal to the user of the device **10** that the cartridge **34** requires placement.

An alternative embodiment of adhesive applicator cartridge **34** is shown in FIG. **34**. In this embodiment, the cartridge **34** operates in substantially the same manner as described above in relation to FIG. **33**. However, the cartridge **34** is mounted on an angle with respect to the transport surface **5** and is moveable in a rocking motion so as to roll across the surface of the sheet **12** to apply the adhesive tape thereto.

The various embodiments of the adhesive applicator cartridge described above provide for a simple and effective means for applying adhesive to one or more sheets of paper or the like for binding the sheets together. The cartridges enable an automated means for applying adhesive and provides a simple means for refilling or replacing the cartridges where required.

It will be appreciated by those skilled in the art that many modifications and variations may be made to the methods of the invention described herein without departing from the spirit and scope of the invention.

The claims defining the invention:

1. A pad forming device for forming a pad from a plurality of individual sheets of material, the device comprising:

a body defining a space within which the device is contained;

a feeder mounted to said body for receiving one or more of said plurality of individual sheets of material and feeding said individual sheets into said body;

a cutter provided within said body to cut each individual sheet fed from the feeder to predetermined dimensions;

an adhesive applicator provided within said body to apply an adhesive to a portion or portions of each sheet cut from cutter;

a stacker provided within the body to arrange each sheet wherein the adhesive have been applied in one or more stacks;

a former unit provided within the body to form the on or more stack of sheets together to form on or more said pads;

a collector mounted to said body for receiving the one or more formed pad for collection;

and one or more transport mechanisms provided within the body to transport the individual sheets and subsequent formed pad within said space in a continuous path between the feeder and the collector.

2. A pad forming device according to claim **1**, wherein said device is of a size that is less than 1.2 m^3 in volume and/or has a foot print that is less than 1.2 m^2.

3. A pad forming device according to claim **1**, wherein the device is incorporated into a piece of office equipment, wherein the piece of office equipment comprises a printer, photocopier, scanner, fax machine, or multifunction device.

4. A pad forming device according to claim **1**, wherein the feeder comprises an inlet formed in the body through which the plurality of individual sheets are received.

5. A pad forming device according to claim **4**, wherein one or more driven rollers are provided with the feeder to feed said individual sheets into said body.

6. A pad forming device according to claim **1**, wherein the cutter is mounted within the body to define a cutting zone through which the fed sheets pass.

7. A pad forming device according to claim **6**, wherein the cutter comprises one or more blades positioned to cut the fed sheets as they pass through the cutting zone.

8. A pad forming device according to claim **1**, wherein the adhesive applicator is mounted within the body to apply a layer, strip or band of adhesive material to a portion or portions of each fed sheet.

9. A pad forming device according to claim **8**, wherein the layer, strip or band of adhesive material is applied to at least a portion of a first side of each fed sheet.

10. A pad forming device according to claim **9**, wherein the layer, strip or band of adhesive material is applied along an edge of the first side of each sheet.

11. A pad forming device according to claim **10**, wherein the adhesive applicator includes a reciprocating stamp member in communication with the adhesive material to apply the layer of adhesive material along the edge of the first side of each sheet.

12. A pad forming device according to claim **10**, wherein the adhesive applicator includes a roller member in communication with the adhesive material to apply the layer, strip or band of adhesive material along the edge of the first side of each sheet.

13. A pad forming device according to claim **8**, wherein the adhesive applicator includes an adhesive storage vessel to store said adhesive material for application to each fed sheet.

14. A pad forming device according to claim **13**, wherein the adhesive applicator is removable from the body.

15. A pad forming device according to claim **9**, wherein the stacker collects said fed sheets and orientates said sheets in a stack such that first side of each sheet is in contact with a reverse side of an adjacent sheet.

16. A pad forming device according to claim **15**, wherein the former unit comprises a press to apply a pressing force to the stack of sheets such that the adjacent sheets adhere to each other in the region along the layer, strip or band of adhesive material to form said notepad.

17. A pad forming device according to claim **16**, wherein the collector comprises an output tray attached to said body upon which the formed pad is received.

18. A pad forming device according to claim **1**, wherein one or more transport mechanisms are provided within the body to transport the individual sheets and subsequent formed pad therethrough.

19. A pad forming device according to claim **18**, further comprising a controller for controlling and co-ordinating the operation of any one or more of the feeder, cutter, adhesive applicator, stacker, former unit and one or more transport mechanisms such that the pad is formed within the body.

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